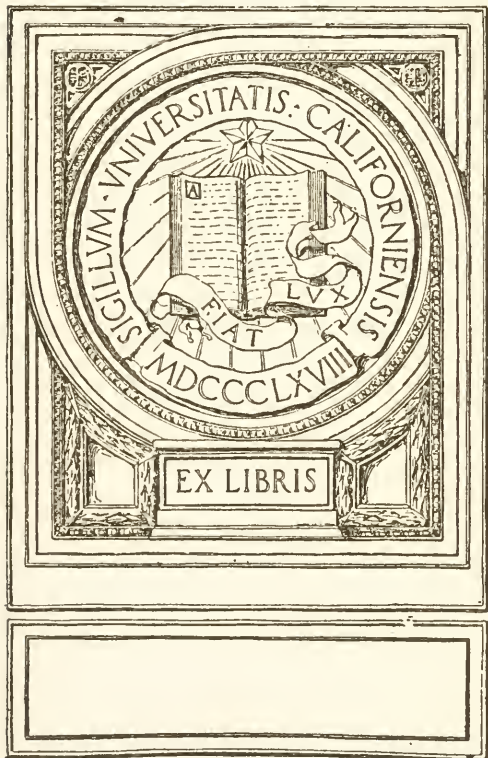


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ESSAYS FOR COLLEGE ENGLISH

SELECTED AND EDITED

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PREFACE

BOOKS of selected essays, introducing the student to the more fundamental and far-reaching movements of thought of our times, are being more and more widely used in Freshman work in English. They have been, without exception, of a general nature and not specifically adapted to students in technical courses. This volume is an attempt to supply a collection especially suited to students in Agricultural Colleges. There is no reason, however, why students of other colleges should not find these essays equally fitted to their needs.

The editors have been confronted with an unusual opportunity. The Agricultural College is forced by circumstances to regard itself — even more than other colleges — as an educational institution for developing leaders. Its graduates who return to practical farming achieve at once, if they are equal to it, a position of prominence and influence in the whole life of their respective communities. It is of the greatest importance, therefore, that these students acquire a definite professional outlook characterized by perspective and breadth. The editors of this volume have tried to collect such essays as would, all together, provide these students with the great ideas and ideals necessary for a worthy interpretation of their profession. As leaders in country life, the graduates of our Agricultural Colleges — in common with the graduates of other colleges — should have the power of applying ideas to their life so as to reveal its excellencies, its present shortcomings, and its latent possibilities. To help supply these ideas is a privilege.

The essays have been grouped so as to indicate the large problems which the agriculturist as a professional man — in

common with other men — must necessarily confront and study. A group of essays championing the various activities of the Country Life Movement is placed first, because they are designed to lead the student to consider what values ought to be achieved in individual and social life in the country. Inasmuch as Agriculture is based on science, the next group of essays discuss the place of science in human life. A third group, presenting each of the various movements of education, should help the student to formulate his collegiate ideals and to broaden his intellectual perspective. Finally, it is desirable that the student should consider with care some of the more general problems of American life.

Essays from opposite points of view have frequently been included in order to arouse students to thought and discussion. While both range of treatment and the variety of subject matter may develop the critical faculties of the student, much argumentation is probably of doubtful value. A careful study of the other side is more wholesome and more likely to lead to a true perspective. Nevertheless, at the end of the discussion, each student should have acquired new ideas, which he feels sure are true and significant. The study of such essays as this volume contains should, therefore, stimulate students of Agriculture, or students of other subjects, to a high intellectual attitude toward their profession as well as toward the common problems of life.

A SUMMARY OF THE SUBJECTS DISCUSSED IN THE ESSAYS

Problems of Country Life

The contribution of mechanical conveniences to farm life, conditions and needs of country life, the problems of the social center, the country church, the country school, the country home, farm credits, the relation of the out-of-doors to country life.

Science

The demand for scientific knowledge in order that man may conquer his environment, a review of the last fifty years in science, what remains for science to do, the limitations of science.

Education

The education in the applied science of Agriculture, corrective problems in this education in applied science, the education in pure science, the education in humane letters.

Problems of Life in General

Influence that the open country has had in developing American characteristics, the influence of democracy upon the individual, the influence of taste upon the various problems of life, the influence of character upon the work that a man does.

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INTRODUCTION

THE ANALYSIS OF ESSAYS

To master the thoughts of others is the one business of the college student. From the moment he enters his first classroom with his text-book, until he goes out from his last lecture with his completed notes, he is continually trying to assimilate the ideas of teachers and of writers. The ability to master these thoughts easily and quickly makes him a leader — its lack, a dullard.

The difficulty with most inexperienced students is that they read only sentences, and are unable to grasp the thought of an entire piece of writing. Their eyes race along the lines and they read statement after statement until, at the end of fifteen or twenty pages, their minds are so depressed with a vast number of unrelated ideas that, when asked to explain the meaning of the essay or of the chapter, they become confused and finally give up in despair.

The remedy for this sort of confusion is the careful analysis of long essays. This may prove a bit tedious at first, but soon the student will realize that every careful author proceeds according to some definite plan. He will then try to grasp this plan and the point that the author is attempting to enforce by its use. Gradually he will begin to read for ideas, and will come to assimilate thoughts.

Analysis, then, is not merely an exercise in English — it is a training in careful thinking. Whether the student is asked to study an article in a magazine or a chapter in a book, he will be able to do it the better, the easier, and the quicker for having analyzed a number of representative essays. Analysis is also of the greatest aid to the student in writing long themes.

Not until he fully understands, through analysis, the care with which trained writers order their thought, is he ready to undertake the writing of long themes for himself. Not until he has mastered their methods will he find that he is able to express his own thoughts clearly and compactly.

In analyzing an essay, the most important problem is to grasp the one particular point which the author wishes to impress. If the reader understands this, he is at the very heart of the mystery, but if he misses it — regardless of how many other minor ideas he may grasp — he is merely groping about in uncertainty. The first question, then, to ask is, "What point is the author trying to make?"

In order to find it, the reader should know that the careful author hints at this point in his title. In the first few paragraphs he attempts to interest the reader in the point and to prepare him to take a sympathetic attitude toward it. As soon as he has done this, — and he seldom uses more than half a dozen paragraphs even in an essay of twenty or thirty pages, — he states the point as clearly and concisely as possible. In order that the reader may more easily find it, he places this statement at the beginning of a paragraph or in a short paragraph by itself. Having presented the point, he is in duty bound to impress its truth upon the reader. Where it is possible, he presents in chronological order the facts which will do this; otherwise, he leads the reader from what is generally known to be true about the point, to what is not generally known. He is sure to arrange these facts in some logical order, so that when the reader recognizes what the order is, he can more easily hold the entire essay in mind. The author guides the reader, in passing from the discussion of one of these facts to the next, by the use of transitional sentences and brief summaries. Near the end of the essay he restates his point and quickly reiterates the main facts which he has used to impress its truth. In concluding the essay, he gives his final judgment regarding the point.

Once the reader has found the point of the essay and has discovered the main ideas by which its truth is impressed, he is ready to ask a second important question, "Does the author really make his point?" Many students take it for granted that, once a thing gets itself into print, it is necessarily true. Such an attitude bewilders the mind with a mass of undigested and conflicting statements. If the reader is ever to master knowledge, he must pause and question each new thought that is presented to him.

How is the reader to answer intelligently whether or not the writer has made his point? He may reach his conclusion through a series of tests. The first is to ascertain whether the author sticks to his point throughout his entire essay. Sometimes a careless writer aims at nothing in particular, and in this case, is sure to shoot wide of the mark. But if he finds that the author has the point in mind in his title and has arranged every idea — from the first paragraph to the last — so that it contributes to the point that he is trying to make, the reader may feel satisfied with the first test. He should then make a second test. After summarizing the main ideas which the author has used to impress his point, the reader should examine these separately to see that the author has shown each to be true. If he finds any idea the truth of which has not been established, he should discard it; he should then take the remaining facts and ask, if these are granted true, whether it necessarily follows that the main point is true. If he can answer these questions in the affirmative, he may be fairly certain that the author has not failed to make his point.

Then there is a third question that the student should ask concerning every essay that he reads, "Has the author made his point in the most effective manner?" Much slovenly thinking and writing grow out of the attitude that it matters not in what manner the author proceeds, so long as he makes his point. Just as efficiency demands that a man examine every detail of his business to see which contribute to his

profits and which do not, so the careful student must test each idea to see whether it helps the author to impress the point of his essay.

To answer whether the writer has made his point in the most effective manner, the reader should inquire whether the main ideas could be arranged in a different order so as to be more logical or more forceful. He should also ask whether the most important ideas have been given the most emphatic places in the essay — the beginning and the end. He should further question whether each idea has been given space proportional to its importance. If an important idea is hidden away in an essay like a “joker” in a law, and if an unimportant idea is given ten paragraphs while an important idea receives but three, then the reader may rightfully doubt whether the author has been as effective as he should be. Finally, the reader should examine whether the author has expressed himself clearly and compactly, with skill and ease; whether he has used the right word in the right place; whether his phrases are felicitous; and whether he has so ordered his thought as to keep the reader mentally alert and interested. If a writer is to be really effective, he must be able to satisfy all these tests.

In analyzing essays, the student will find that the Thought Analysis, the Summary, and the Criticism are guides to careful work. In order to secure uniform results, the student should use the following definite rules: —

THE THOUGHT ANALYSIS

1. Summarize the point of the entire essay in a single complex sentence.

The principal clause should contain the leading thought; the subordinate elements, the limiting thoughts. Matthew Arnold's essay, “Literature and Science,”¹ may be summarized as follows: —

¹ See pages 326-348 of this book.

In spite of the present movement in favor of science, humane letters are not in much danger of being thrust out from their leading place in education, since they are related to the instinct for self-preservation in mankind in a way that science is not.

2. Summarize — using a single sentence for each — the main ideas which the author uses to enforce his point. Unless the student proceeds carefully, he will confuse these main ideas with subordinate material. An author does not employ, usually, more than five main ideas; often he limits himself to two or three. The main ideas of Matthew Arnold's essay, "Literature and Science," may be summarized as follows: —

- I. Humane letters will, in the long run, keep their leading place in education, since they satisfy the aim of culture — which is to know the best that has been thought and said in the world.
- II. Science cannot long maintain the chief place in the education of the majority of mankind, since it leaves one important thing out of account — the constitution of human nature.
- III. Humane letters will not long remain neglected because they satisfy the need which the vast majority of men feel for relating what they have learned and known to the sense which they have in them of beauty and of conduct.
- IV. Greek letters will continue to be studied since they satisfy the sense of beauty better than do any other letters.

3. Summarize — using a single sentence for each — the subordinate thoughts which the author uses to enforce each of his main ideas. Main idea II of Matthew Arnold's essay, "Literature and Science," may be summarized as follows: —

- A. The powers which go to the building up of human life are conduct, intellect and knowledge, beauty, and social life and manners.
- B. Science is in the sphere of intellect and knowledge and does not relate itself to the other powers which go to the building up of human life.

4. Condense, whenever it is consistent with clearness, the author's statement of each idea.

5. Match the statement of coördinate ideas by parallel construction.

6. Relate the principal ideas to the subordinate by the use of connectives. The most common of these are, "in that," "that is," "for," "because," "the following." The tendency to use "therefore," "accordingly," and "hence" will be found, upon careful analysis, to be due to the confusion of principal with subordinate ideas.

7. Use the following system of symbols to distinguish between coördinate and subordinate ideas: —

I.

A.

I.

a.

I'.

a'.

8. Remember that every statement in the Thought Analysis must be in the form of a complete sentence.

COMPLETE THOUGHT ANALYSIS OF MATTHEW ARNOLD'S "LITERATURE AND SCIENCE"

The Point of the Essay

In spite of the present movement in favor of science, humane letters are not in much danger of being thrust out from their leading place in education, since they are related to the instinct for self-preservation in mankind in a way that science is not.

The Thought Analysis Proper

I. Humane letters will, in the long run, keep their leading place in education since they satisfy the aim of culture, which is to know the best that has been thought and said in the world, for,

A. Professor Huxley's objection to this study because it is an elegant one, — but slight and ineffectual, — because it is a superficial humanism, — the opposite of science or true knowledge, — is without weight because he confuses humane letters with *belles lettres*.

B. Knowing Greek and Roman antiquity helps us to know ourselves and the world in that it helps us to know who these ancient peoples were and what they did in the world; what we get from them, and what is the value of their bequest.

- II. Science cannot long maintain the chief place in the education of the majority of mankind, since it leaves out of account the constitution of human nature; that is,
 - A. The powers which go to the building up of human life are conduct, intellect and knowledge, beauty, and social life and manners.
 - B. Science is in the sphere of intellect and knowledge, and does not relate itself to the other powers which go to the building up of human life.
- III. Humane letters cannot long remain neglected, because they satisfy the need which the vast majority of mankind feels for relating what they have learned and known to the sense which they have in them of beauty and of conduct, because,
 - A. Medieval education so deeply engaged men's hearts because it so simply, easily, and powerfully related itself to their desire for conduct and beauty through the logic of scripture and church.
 - B. Since modern science has changed man's view of the universe, there is a greater need than ever for humane letters to establish a relation between the new conceptions and our instinct for beauty and for conduct.
 - C. We shall find as a matter of experience, if we know the best that has been thought and uttered in the world, that humane letters have a fortifying, elevating, quickening, and suggestive power.
 - D. Humane letters call out a man's being at more points and make him live more fully than do the natural sciences, for the former are always coupled with a knowledge of the great general conceptions of modern physical science, while a study of the natural sciences brings no knowledge of humane letters.
- IV. Greek letters will always continue to be studied, since they satisfy the sense of beauty better than do the letters of any other nation, for,
 - A. While English letters have striking ideas and well-executed details, they have not the high symmetry combined with the satisfying and delightful effect which characterizes Greek letters.
 - B. So long as human nature remains what it is, the instinct for self-preservation in humanity will bring men back to Greek by their wants and aspirations.

THE SUMMARY

1. Condense the entire essay into a single paragraph. Make the point of the essay the topic sentence.
2. Take up the main ideas in the same order in which the author uses them.
3. Give each main idea space proportional to the author's treatment of it.
4. The summary should contain the author's thought and not the student's reaction toward the thought.
5. The sentences should be fitted together so that they read smoothly.

SUMMARY OF MATTHEW ARNOLD'S "LITERATURE AND SCIENCE"

In spite of the present movement in favor of science, humane letters are not in much danger of being thrust out from their leading place in education. This is true because they satisfy the aim of culture, which is to know the best that has been thought and said in the world, in a way that science does not. They relate themselves to the powers which go to the building up of human life — to conduct, to intellect and knowledge, to beauty, and to social life and manners — in a way that science does not. It has been through this ability to relate itself to these various powers that education in the past has been able to engage men's hearts so deeply. Now that science has overturned all the past conceptions of the universe, there is a greater need than ever before for humane letters to establish a relation between the new conceptions and these instincts. We shall find, if we give them a chance, that humane letters will have a fortifying, an elevating, and a quickening power upon us. We shall find, too, that they will call out our lives at more points and make us live more than science is able to do. We shall therefore find, so long as human nature remains what it is, that the instinct for self-preservation, the wants and aspirations in humanity will keep men from substituting the natural sciences for Greek and the humane letters of other nations.

THE CRITICISM

1. The criticism should answer the following questions:
 - I. Has the author made his point?

A. Has he made every idea in the essay contribute to the point?

B. Has he made a sufficient number of ideas contribute to the point to make it necessarily true?

II. Has the author made his point in the most effective manner?

A. Has he presented his ideas in such an order that the most important ones are given the most important places?

B. Has he given each idea space proportional to its importance?

C. Has he expressed himself clearly, compactly, and felicitously?

2. The criticism should be so written that it makes its point and makes it in the most effective manner.

3. The criticism should contain the student's point of view toward the essay. It should be based, not upon narrow prejudice, but upon careful analysis of the thought.

4. Frequently the students should write criticisms of one another's long themes.

JAMES CLOYD BOWMAN

ESSAYS FOR COLLEGE ENGLISH

THE NEW FARMING GENERATION¹

CHARLES M. HARGER

AN encouraging note for the future of the farming sections comes out of the Middle West where there has been reached a stage of development that includes something more than the counting of bushels and acres. It is the report that a larger number of young men each year are choosing farming for their life occupation. The agricultural colleges are expanding their facilities to accommodate increased attendance and the demand for "institutes" which shall instruct the agricultural communities is insistent. This means that the position of the farmer as a business man is being established, and his sons, instead of hurrying to the city to seek another occupation, are realizing that there is a field for their best endeavor on the old homestead — though that term has almost passed into the realm of melodrama.

The new generation of farmers is something of a surprise to the student familiar with that of early days. It comes with something of an awakening to hear the man in overalls, milk pail or pitchfork in hand, talk in clear English of "balanced nutrition," "economy of production," and "scientific breeding." He discusses the quality of soil ingredients and moralizes on the benefits of crop rotation. He has learned farming from books, which was a method that our fathers scorned,

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but the fact that he is able to produce more bushels to the acre and more profit from the year's work is earning him respect. He stands for a new era on the farm and in its management.

Not alone in the better management of the fields is the new generation of farmers making advancement. That is but a part of the accomplishment of an agricultural education. The fact that the young men have been out in the world and have learned how others do things gives them ideas in accomplishment of farm duties with less exertion. The bane of the farmer's life has been that he was compelled to rise with the sun and work until long after its setting. He found it difficult to obtain farm help because the days were so long and the relaxation so limited. The new generation is changing this, partly through the more systematic management of farm work and more by the introduction of new methods.

Milking cows is at best a wearisome task, and the farm boy who spent two or three hours of early morning and of late evening at that task, looks back upon it as a nightmare in his home life. Nowadays the educated young farmer equips the dairy with milking machines which enables him to milk faster than three expert men could do it, and have no labor except that of overseeing the process. Following the plow day after day wears out the most willing youth. Even the sulky-plow did not entirely remove the burden, for the tired horses always called for sympathy. The modern farmer places in the field a gasoline engine to which is attached a half dozen plows, and the plowboy becomes a field chauffeur, getting through the task with little weariness and much satisfaction. Water pipes through the barns and water pressure through the house means comfort to the farmer and his family, motor cars diminish distance and give pleasure, amply paid for by the increase of health and economy of time.

These and many other things that relieve the farmer's life from dreariness have come through the enterprise and advancement of the new generation. Where the boy has been

sent to college and then allowed to carry into effect the lessons he learned there is little for commissions and economists to do — the farmer's problem is taking care of itself.

Not much can be expected of the older generation. The man who has farmed in the old way for forty years is going to keep on in his accustomed path. In no profession or avocation is there more unyielding adherence to habit and tradition than on the farm. If this be doubted, visit a rural community in one of the older States and note the processes to which older farmers yet cling.

In contrast inspect a farm in the Middle West where the spirit of progress and advancement is manifest. The modern machinery, the new methods and the larger grasp of the possibilities in making farming a business speak for themselves. The attitude of the worker toward his task takes on a new aspect, he considers his land as so much equipment, the factory against which are placed fixed charges and from which are to be derived legitimate profits. This viewpoint marks the real reason for the modern farmer's success, for out of it is evolved the planning and calculation that result in a steady measure of prosperity, the source of a farmer's happiness.

Given a conviction that he can obtain from the soil a regular income and do it with no greater exertion than is required to succeed in any other business, the attraction of the farm for the young man will be ample — what he has objected to has been the intense labor and uncertainty of results.

This is exactly the object of the education given by the agricultural schools, and as they turn out their hundreds of educated farmer youth there should be a change in the farming community commensurate with the infusion of scientific methods and a more intelligent comprehension of possibilities. This must come from the young generation, and the father will do well to give his sons opportunity to test their theories and to put into practice their new ideas, instead of insisting that old ways be followed simply because they are old.

COUNTRY LIFE PROBLEMS ¹

EX-SECRETARY GARFIELD, in an address at the Young Men's Christian Association dinner last week, dealt with the failing attractions of country life, especially life on the farm. As a member of the Country Life Commission, he referred to recent investigations and said that they pointed to increasing "stagnation and decline" in rural regions, upon which the cities still exercise their vast power of action. President Taft touched upon the same subject in one of his recent speeches in the South. Admitting the evils, he was, characteristically, more sanguine than Mr. Garfield. In the President's opinion, country life is in the way of being made so fascinating that it may soon reassert its old place in our civilization, and check the seemingly irresistible drift to the city. "The suburban electric railroads," said Mr. Taft, "the telephone, the rural postal delivery, inventions, and coöperative arrangements are reaching such a point that it will soon become, I trust, more comfortable to live in the country than in the city."

There is truth in this view, but there is also fallacy. Increasing conveniences do, indeed, make country life more tolerable to those who feel themselves condemned to it, but is there any evidence that these new and extending facilities operate to hold on the farm the young men who are burning to get away from it? The telephone in the remote countryside is unquestionably a great blessing. With a service made relatively cheap by the use of party-lines, it brings the distant farmhouse into instant touch with physician and shopkeeper and postmaster. It also makes possible a daily interchange

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of neighborhood gossip and a frequent meeting of friends which are, in many sections, giving a wholly new cast to the social side of life in the country. All this must be recognized thankfully, yet the doubt remains whether such civilizing inventions do or can keep down that persistent and growing distaste for life on the farm of which ex-Secretary Garfield spoke so regretfully. Because the boy in a New Hampshire farmhouse can telephone to the nearest village, is he the less likely to slip away to Boston to get a job as motorman? We know of no statistics on the point, yet the fact that farms continue to be abandoned, and that the city keeps on pulling to itself country-bred youth, would seem to argue that neither telephone nor trolley nor the daily newspaper left in the mailbox by the roadside will suddenly make thousands of men and women fall in love with the country which they now hate.

As a matter of fact, it may be plausibly argued that the very introduction in the country of a modicum of urban comforts and conveniences merely whets the longing for the city. Sir Horace Plunkett, who for twenty years has been a close student of agricultural conditions in Ireland and in the United States, is distinctly of the mind that the thing actually works in that way. The trolley car passing once an hour simply renders the appeal of subway and elevated and the two-minute headway all the stronger. The farm telephone is very good, but how if it puts into the youth's head a still more vivid conception of the charm of a great city knit together in the enjoyment of every modern facility? What possible chance has the newspaper which reaches the farm in the evening, or a day late, of competing in excitement with the city editions appearing clamorously all day long and far into the night? Sir Horace Plunkett soberly concludes that the trend to the cities has actually been heightened, not diminished, by giving the country a fuller taste of urban pleasures and conveniences. Having got a small part, the country folk desire the whole,

more than ever. Careful inquiry should be directed to ascertaining whether this is really the fact.

For so deep a social disturbance as the steady forsaking of country life by those who can escape it, remedies that go deep are obviously necessary. And they will have to be felt by the masses rather than presented by the rural "uplifters." Causes both economic and social must get powerfully in operation before we shall see the beginnings of the desired effect. The argument from material well-being seems already to be slowly making headway. Historically, the flight from the country to the city was at first a part of the industrial revolution of the last century. The great factories, the more numerous jobs, were in urban communities, and farm workers, with those whose house-industries had been destroyed by machinery and specialization, went to the towns to find work. It may be that a reaction will set in, also for economic reasons. The struggle for existence may drive people back to the land. With farming made easier and more scientific and profitable, the terrible pressure in cities may soon begin to extrude to country districts many who must seek a new environment and opportunity if they are to maintain themselves above want or beggary. Until some such solid advantages, or social necessities, can be made the rural set-off to the artificial charm of the city, it will be in vain to hope for a repopulation of deserted hillsides. To reinforce the economic argument by every appeal on the score of health and sentiment is, of course, an obvious duty. Nothing that can be done to improve country schools, or to promote human intercourse among scattered farmers, should be omitted. And it might well be hoped that a change of mental attitude could be brought about so that men and women would again associate their happiest experiences with country sights and sounds, and have such remembered thrills of pleasure as stirred De Quincey when he recalled his joy, as a child, at the blossoming of the crocuses in his father's garden.

CONDITIONS AND NEEDS OF COUNTRY LIFE¹

JOHN M. GILLETTE

THERE seems to be a consensus of opinion that there is something wrong with the country. Articles discussing the subject are myriad. Did the agricultural population view itself as urban writers appear to view it, it would doubtless consider itself as a fit subject for treatment at the old-time "mourner's bench." That certain portions of our rural inhabitants are interested in the "improvement of rural matters" is evident from the appearance of discussions of some of those matters at various kinds of farmers' meetings. But that the agriculturalists view the situation with alarm is by no means evident. In order to help clear up the situation, it may be well to attempt to determine just what is the rural problem. It may be well to show first what it is not.

I. *Negative Aspects of the Problem*

1. It would be a mistake to suppose that the problem consists in rural deterioration or arises because of rural degeneration. There has taken place in the United States no such thing as general rural deterioration. A slight acquaintance with the history of our country will afford ample evidence that there has been general advance almost all along the line in country life. As compared with pre-national times the farm population is better housed, better clothed, better fed, better educated and informed, is more productive, produces what it does produce more easily, has better implements and agencies with which to work, and the farm women have

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been emancipated from much of the arduous labor which fell to their lot in the period of household industry.

Indeed one does not have to recur to so remote a period as that to find striking contrasts. Many of our aged contemporaries who were reared on the farm well remember the backward conditions which obtained in matters of production, marketing, transportation, obtaining necessities of life in the home, methods of living, and education. Respect for truth impels us to recognize a great advance in the general conditions of life of country populations. It is well to remember that the "rural problem" is the product of intelligence, directed towards a province which has hitherto been somewhat remote from comparison and criticism. We have evolved certain ideals of life with the growth of cities and civilization, have brought them to bear on country life with the result that the latter has been found backward in some respects as measured by those ideals. The few instances of rural arrested development or of deterioration are a minimum in total country life as compared with the extensive slums of the cities.

2. It is also a mistake to assume, as is so frequently done, that the problem lies in the direction of rural depopulation. It is commonly taken for granted that the vast growth of urban centers has taken place at the almost entire expense of rural districts. There is a movement to the cities of rural populations. It may have its serious aspects. But it is not the problem preëminently. An analysis of the census reports and those of the Commissioner General of Immigration gives these results. City growth ensues from four factors, namely, incorporation, natural increase, migration from the country, and immigration. The first is inconsequential. Natural increase accounts for about 20 per cent of city increase, immigration, for from 65 to 70 per cent, and rural migration for the remainder, say from 10 to 15 per cent.

Much of the seeming loss of population to the cities arises

as a result of movement of farmers away from their old locations to newer agricultural regions. Practically all of the older states have been heavy losers from this condition. Iowa lost population during the last decade because the value of land was high and farmers sold to others and purchased lands in the Dakotas and Canada, helping to raise the land values in those regions enormously.

Nor must it be expected that the movement to cities which actually takes place is likely to be prevented in great measure. The forces at work in developing civilization and which must be considered basic and inevitable are largely accountable for the movement. The matter may be simply stated. One farmer produces sustenance for the support of many besides himself. Double his productive capacity and his produce supports double the original number. Carry this principle into operation generally and it will be seen that non-agricultural communities must be depended on to absorb the released population. Hence cities must continue to make large advances in population as compared with the country.

3. Nor is the rural problem one of improving production chiefly, for the nation as a whole, although there are sections such as much of the South where improved agriculture must take place before other essential things may be added unto them. The motive of this statement is not one of minimizing the importance of inducing a more scientific and productive agriculture. The economic aspects of farming are exceedingly important. Increased production should mean an increased profit and this in turn should mean higher standards of living, better education of children, and improvement in methods of living. Farmers no doubt get too little out of their soil. Much greater results might be secured also by placing agriculture on a business basis, by regarding it as a capitalistic enterprise and measuring its business success by the extent of profits. Organization of the various factors entering into the business so as to secure the combination

which would yield the largest returns, and keeping a record of all phases of the business so as to have exact knowledge of cause and effect, should prove advantageous. A more equitable marketing system by means of which the agricultural producers secure a larger share of the consumer's price than they do at present is desirable and constitutes a very considerable problem in itself.

While some portions of the nation are backward economically in agriculture, it is not true as a whole even as compared with many other businesses. Our farmers are as progressive in their business as a class as are the mass of retail merchants, or as the mass of small factory men. Further there is nothing critical in the present method of agricultural production. We are faced by no famine. Our exportations of farm produce are still large and promise to continue so for some time to come. Farmers are not going into bankruptcy because of poor methods. They are prosperous as a class. Admit, as we must, that it would be far better if methods which did not pauperize the soil were employed, yet this is not the fundamental difficulty in farm life.

II. *Positive Aspects of the Problem*

1. The very center and essence of the rural problem is the necessity of securing the establishment of a new point of view, a wider and more vital outlook on the part of the residents of the rural regions. At first consideration this may seem rather a bizarre statement of the problem, one that is remote from the pressing needs of those regions. But granting for a moment that the statement is valid, let us recall in what the value of a point of view consists.

The fact of dynamogenesis emphasizes the truth that every idea seeks to realize itself in action, to get itself carried out by means of the physical organism. There is a tremendously significant relation between ideas and activities. Ideas, in the evolutionary sense, are not for playing mental checkers

with but to direct activities and conduct. Philosophers may speculate about them or with them, but for the mass of mankind they are entertained in order to be put into execution. And the more powerful the ideas are the more true this is, that is the more immediate is the execution. The ideas which are bathed in a glow of feeling are the most executive. They carry themselves out most speedily.

Ideals of life and the action are among the more dynamic forms of ideas. They are the ones which appeal to men as the most desirable to actualize, are most longed for, have the largest element of feeling. But an ideal is only a point of view. An ideal as to a certain line of action expresses the individual's viewpoint relative to that section of human activities. My ideal for the farmer is expressed in the statement of my point of view for the farmer.

When talking of viewpoints we are speaking of the most fundamental factor in a given situation. A wholesome viewpoint makes a wholesome life. A changed viewpoint changes the life. Obtain the power to shape the point of view of the succeeding generation and you can lead it where you will. Hence, whatever is backward in country life is due to its outlook, and we cannot hope for very great improvement until the outlook of rural inhabitants relative to the place and significance of farm life is transformed.

2. There are two vital points on which a new outlook must be developed among agriculturalists. If this can be secured all the other problems may be associated with it as incidents of attainment.

(a) One of these points is the matter of living. A new outlook on life, its meaning, its possibilities of enjoyment and satisfaction, and as to the means which are fit to secure those ends is intensely needed. Life to the average farmer is devoid of the larger and more attractive elements. His life is a round of eating, working, sleeping, saving, economizing, living meagerly, recognizing only the bare necessities, skimp-

ing along with inconveniences, especially in the home, which is uncalled for considering his wealth. The wealthy farmer is one of the most helpless of men in the matter of finding satisfaction. This appears whenever he moves into the city to live. He still practices the stern economies, lives in houses without modern conveniences, keeps the old rag carpets, attends no theaters, goes to no lectures unless they are free, and acts as a man in a strange world or as one with a starved soul. The enjoyment side of life is lacking. His cultural and esthetic soul is in a state of suspended animation.

Such facts as these in the lives of the multitude of rich residents of rural districts make it apparent that the fundamental problem is not one of economics but of transforming farmers so that they look at life in a different manner. The appreciative qualities of life must be built up. They need to have developed the sentiment that the fullest and most successful life is the one which obtains the greatest number of satisfied wants in passing. Under this transformation the country will build good houses, comfortable in the modern sense, having the conveniences which lighten the lives of the indoor workers, and the equipment which renders the place sanitary and healthful. It will put in machinery everywhere possible to do the hard work, to reduce labor, to eliminate chores, as well as to make production more profitable. It will beautify the grounds, improve the roads for travel purposes, and look to nature as a source of inspiration.

(b) The other vital point is to secure a social outlook. The farmer has been burdened with an individualism which has been extreme and in a measure disastrous. Under the system of education under which he has been schooled it is perfectly natural that this should be so. The social side of life has never been opened to him. That he was a part of human society, that he worked under inexorable laws of markets and politics, that a community life may be made a means of satisfaction and training were not self-evident and

axiomatic propositions. In fact he has no conception of such truths nor had his immature teachers in the "little old red schoolhouse." His universe was bounded by physical nature in the shape of sunshine, rain and frost, and in a very small measure by his family and one or two neighbors. He and nature accounted for what he obtained. There were no human interlopers, save at critical times. There was no social accountability that was very persistent and apparent.

As a consequence he never caught sight of the fact that the farmers are a great social class and have a worth and dignity as such. It has wealth of enormous proportions, approximating one-fourth of the nation's wealth; numbers of still greater proportions, practically one-half of the nation's population; characteristics and interests which are common to its members and which differentiate it from all other social classes. Its work is worthy, its position secure, its future promising. But in commanding power and influence in the direction of national affairs this really great social class is lacking and manifests its extreme weakness. Only by its vote at election times does it demonstrate its existence. It has not enough power to protect itself from the exploitation of other classes of a predatory nature. It has been victimized by the politicians, the trusts, the railways, and now mercilessly by the middle-men. What it needs is to develop a class-consciousness which is self-respecting, potent for organization purposes relative to government and marketing, and which operates to secure a greater regard for its rights and possibilities.

On another side the farmer's social outlook has been wanting. In rural communities the community, sociability, associational side of life has lain fallow. There has been a reign of social stagnation and social poverty. Without social intercourse the life of the average person would be considered empty notwithstanding the largeness of the farm, the heavy yield of produce, the quality of live stock, and the extent of the bank account. In social matters, even to a greater degree

than in those of finding satisfaction in living, the country is far behind the corresponding grades of city life.

In one sense this dearth is due to a lack of intellectual stimulus and ferment. Reading has not been cultivated as a source of pleasure and a means of larger information. Social intercourse of a larger general nature is likely to be empty where an intellectual circulating medium is absent. A grasp and discussion of the more important social matters awaits the development of information.

Associations of a recreative and entertainment sort are little appreciated in the country. Men of the farms have not discovered the play life. Its possibilities have not been opened to them. Organized games for the children and recreation for the adults are among the greatest desiderata of rural communities. Opportunities for these will present themselves as soon as their appreciation is developed.

Deficiencies of social contact and co-operative stimulus are apparent. Cities abound in means and agencies to satisfy these ends. Isolation has seemed to insulate farmers from each other. It is an obstacle whose gravity must be realized although its prohibitive strength is likely to be overrated. Organizations for bringing about community co-operative activities for both economic and sociability purposes are highly desirable and necessary and are coming into existence as fast as the appreciation of their worth is discovered by the farming community.

3. There are certain fundamentals which are incident to the realization of this needed point of view. They must be obtained before the larger and better outlook can be fully and permanently rooted as a part of the working capital of rural society.

(a) Leadership of a residential and effective kind is necessary to enable the country to work out its destiny along the lines indicated above. A trained resident leadership is largely wanting in agricultural neighborhoods. Young men

and women who go to higher institutions of learning seldom settle in the country. Even the students from agricultural colleges must be included in this statement. The country is being sapped of its ability of the trained sort by the towns and cities. It has plenty of natural ability left but it is not developed into a working leadership. The country is therefore forced to look to other sources outside itself for initiative and organizing ability which is required. So long as this is the case it must suffer accordingly. Every class and community must ultimately expect to depend on its own intelligence and the sympathetic devotion of its own able managers. Even fairly intelligent communities are handicapped without them.

(b) The reorganization of rural education is a necessary step toward the realization of a changed viewpoint and a larger rural life. The country school is one of the few things that has remained practically unchanged during the last quarter of a century. While farms have grown, farming has been improved, houses and barns have become larger and better, the country church has been better housed and manned, the old schoolhouse has remained as it was, and the course of study has become little more adjusted to the needs of the times. To meet the demands of the situation some important modifications must be made in rural schools.

First, they must be depended on to furnish the resident leadership which is required. Higher institutions of learning cannot do this because of the leakages noted above, and because they cannot touch the life of every boy and girl directly in necessary ways. A leadership must be informed on the things which are close to farm life; matters of agriculture, marketing, organization for protective purposes as well as for constructive objects, the worth and value of sociability functions of the upbuilding sort, and the improvement of home life. In order to understand and appreciate those things it must have a training and culture in them during the education

period. Every one must be so informed and skilled that he or she may rise to take a leading part in the affairs of the community if the ability is present. This means that the schools of the region must contain and teach the matters which are crucial and intrinsic to farm life. Agriculture, domestic economy, rural sociology, are some of the necessary and pressing subjects which must be taught.

Second, the consolidation of schools constitutes another necessary step to realize the object denoted. The single-room school-house is entirely inadequate to meet the situation. It cannot supply the grading, the able teaching force, the equipment and room for carrying on work of a vocational nature, the numbers of pupils needed to carry on organized play, the differentiated housing and facilities demanded for the sociability, recreational, entertainment, and cultural activities of the adults as organized into a social center, and other important neighborhood functions. Moreover, the consolidated school, while providing for all of the above essential needs, can extend its course of study so as to include high-school work as a further qualification of that leadership and to appreciate intelligence which the country neighborhood demands. The latter would afford time for the gradual and completer inculcation of the larger and finer ideals of life, and teach the things which will make the life of the average man and woman something more than a mere existence.

4. A closing remark may well be devoted to the proper point of view with which the rural problem is to be regarded. A very large part of the emphasis in the discussions of farm life has been laid on the necessity of improving it in order to keep the boys and girls from drifting to the cities. The assumption has been that the country needs them and that city attractions established in the country would be effective in holding them there. However effective this procedure might prove to accomplish what is urged, and its effectiveness may well be

doubted, it does not appear to be the highest motive which may be furnished.

A more just view regards the improvement of farm life as a procedure which of right belongs to that great multitude of good people who will always be rural residents. They have a humanity in common with the residents of the cities. They have needs of life and work which they ought to realize if they can only obtain a vision of their possibility and worth. They are the heirs of the products which the myriads of the makers of civilization have created and conserved and should of right come into the enjoyment of them. Country populations have a right in their own stead to enjoy all that life offers, even if they do not contemplate leaving the soil for the city. The great problem is to discover a way by which their outlook on life and society may be transformed into one which appreciates the worth of realizing the greatest satisfactions and possibilities which may come to them as rural citizens of the great republic.

THE SOCIAL CENTER: A MEANS OF COMMON UNDERSTANDING ¹

WOODROW WILSON

I DO not feel that I have deserved the honor of standing here upon this occasion to make what has been courteously called the principal address, because five months ago I did not know anything about this movement. I have taken no active part in it, and I am not going to assume, as those who have preceded me have assumed, that you know what the movement is. I want, if for no other purpose than to clarify my own thinking, to state as briefly as possible what the movement is.

The object of the movement is to make the schoolhouse the civic center of the community, at any rate in such communities as are supplied with no other place of common resort.

Ready for Use — The Means of Concerting Common Life

It is obvious that the schoolhouse is in most communities used only during certain hours of the day, those hours when the rest of the community is busily engaged in bread-winning work. It occurred to the gentlemen who started this movement that inasmuch as the schoolhouses belonged to the community it was perfectly legitimate that the community should use them for its own entertainment and schooling when the young people were not occupying them. And that, therefore, it would be a good idea to have there all sorts of gatherings for social purposes, for purposes of entertainment,

¹ An address delivered before the First National Conference on Civic and Social Center Development, at Madison, Wis., October 25, 1911.

for purposes of conference, for any legitimate thing that might bring neighbors and friends together in the school-houses. That, I understand it, in its simplest terms is the civic-center movement — that the schoolhouses might be made a place of meeting — in short, where by meeting each other the people of a community might know each other, and by knowing each other might concert a common life, a common action.

Spontaneous Development

The study of the civic center is the study of the spontaneous life of communities. What you do is to open the schoolhouse and light it in the evening and say: "Here is a place where you are welcome to come and do anything that it occurs to you to do."

And the interesting thing about this movement is that a great many things have occurred to people to do in the school-house, things social, things educational, things political — for one of the reasons why politics took on a new complexion in the city in which this movement originated was that the people who could go into the schoolhouses at night knew what was going on in that city and insisted upon talking about it, and the minute they began talking about it many things became impossible, for there are scores of things that must be put a stop to in our politics that will stop the moment they are talked of where men will listen. The treatment for bad politics is exactly the modern treatment for tuberculosis — it is exposure to the open air.

Now, you have to begin at the root of the matter in order to understand what it is you intend to serve by this movement. You intend to serve the life of communities, the life that is there, the life that you cannot create, the life to which you can only give release and opportunity; and wherein does that life consist? That is the question that interests me. There can be no life in a community so long as its parts are

segregated and separated. It is just as if you separated the organs of the human body and then expected them to produce life. You must open wide the channels of sympathy and communication between them, you must make channels for the tides of life; if you clog them anywhere, if you stop them anywhere, why then the processes of disease set in, which are the processes of misunderstanding, which are the disconnections between the spiritual impulses of different sections of men.

Common Center Essential to Community Life

The very definition of community is a body of men who have things in common; who are conscious that they have things in common; who judge those common things from a single point of view, namely, the point of view of general interest. Such a thing as a community is unthinkable, therefore, unless you have close communication; there must be a vital interrelationship of parts, there must be a fusion, there must be a coördination, there must be a free intercourse, there must be such a contact as will constitute union itself before you will have the true course of the wholesome blood throughout the body.

Therefore, when you analyze some of our communities you will see just how necessary it is to get their parts together. Take some of our great cities for example. Do you not realize by common gossip even the absolute disconnection of what we call their residential sections from the rest of the city? Isn't it singular that while human beings live all over a city, we pick out a part, a place where there are luxurious and well-appointed houses, and call that the residential section? As if nobody else lived anywhere in that city! That is the place where the most disconnected part and in some instances the most useless part of the community lives. There men do not know their next-door neighbors; there men do not want to know their next-door neighbors; there is no bond of sym-

pathy; there is no bond of knowledge or common acquaintanceship.

I am not speaking of these things to impeach a class, for I know of no just way in which to impeach a class.

It is necessary that such portions of the community should be linked with the other portions; it is necessary that simple means should be found by which by an interchange of points of view we may get together, for the whole process of modern life, the whole process of modern politics, is a process by which we must exclude misunderstandings, exclude hostilities, exclude deadly rivalries, make men understand other men's interests, bring all men into common counsel, and so discover what is the common interest.

That is the problem of modern life which is so specialized that it is almost devitalized, so disconnected that the tides of life will not flow.

Means to the Unity of Communities

My interest in this movement, as it has been described to me, has been touched with enthusiasm because I see in it a channel for the restoration of the unity of communities. Because I am told that things have already happened which bear promise of this very thing.

I was told what is said to be a typical story of a very fine lady, a woman of very fine natural parts, but very fastidious, whose automobile happened to be stalled one night in front of an open schoolhouse where a meeting was going on over which her seamstress was presiding. She was induced by some acquaintances of hers whom she saw going into the building to go in, and was at first filled with disdain; she didn't like the looks of some of the people; there was too much mixture of the sort she didn't care to associate with — an employee of her own was presiding — but she was obliged to stay a little while; it was the most comfortable place to stay while her automobile was repaired; and before she could get away

she had been touched with the generous contagion of the place. Here were people of all sorts talking about things that were interesting, that revealed to her things that she had never dreamed of before with regard to the vital common interests of persons whom she had always thought unlike herself, so that the community of the human heart was revealed to her, the singleness of human life.

Worth Any Effort to Promote

Now, if this thing does that, it is worth any effort to promote it. If it will do that, it is the means by which we shall create communities. And nothing else will produce liberty. You cannot have liberty where men do not want the same liberty, you cannot have it where they are not in sympathy with one another, you cannot have it where they do not understand one another, you cannot have it when they are not seeking common things by common means; you simply cannot have it. We must study the means by which these things are produced.

In the first place, don't you see that you produce communities by creating common feeling? I know that a great emphasis is put upon the mind in our day, and as a university man I should perhaps not challenge the supremacy of the intellect; but I have never been convinced that mind was really monarch in our day, or in any day that I have yet read of; or, if it is monarch, it is one of the modern monarchs that rules and reigns but does not govern.

Common Feeling Essential to Free Government

What really controls our action is feeling. We are governed by the passions, and the most that we can manage by all our social and political endeavors is that the handsome passions shall be in the majority — the passion of sympathy, the passion of justice, the passion of fair dealing, the passion of

unselfishness (if it may be elevated into a passion). If you can once see that a working majority is obtained for the handsome passions, for the feelings that draw us together rather than for the feelings that separate us, then you have laid the foundation of a community and a free government; and, therefore, if you can do nothing else in the community center than draw men together so that they will have common feeling, you will have set forward the cause of civilization and the cause of human freedom.

As a basis of the coming feeling you must have a mutual comprehension. The fundamental truth in modern life, as I analyze it, is a profound ignorance. I am not one of those who challenge the promoters of special interests on the ground that they are malevolent, that they are bad men; I challenge their leadership on the ground that they are ignorant men; that when you have absorbed yourself in a particular business through half your life you have no other point of view than the point of view of that business, and that, therefore, you are disqualified by ignorance from giving counsel as to the common interests.

A witty English writer once said: "If you chain a man's head to a ledger and knock off something from his wages every time he stops adding up, you can't expect him to have enlightened views about the antipodes." Simply, if you immerse a man in a given undertaking, no matter how big that undertaking is, and keep him immersed for half a lifetime, you can't expect him to see any horizon, you can't expect him to see human life steadily or see it whole.

Means to Liberal Education

I once made this statement, that a university was intended to make young people just as unlike their fathers as possible. By which I do not mean anything disrespectful to their fathers, but merely this, by the time a man is old enough to have children in college, his point of view is apt to have

become so specialized that they would better be taken away from him and put in a place where their views of life will be regeneralized and they will be disconnected from the family and connected with the world. That I understand to be the function of education, of the liberal education.

Now, a kind of liberal education must underlie every wholesome political and social process, the kind of liberal education which connects a man's feeling and his comprehension with the general run of mankind, which disconnects him from the special interests and marries his thought to the common interests of great communities and of great cities and of great States and of great nations, and, if possible, with that brotherhood of man that transcends the boundaries of nations themselves.

Those are the horizons, to my mind, of this social center movement, that they are going to unite the feelings and clarify the comprehension of communities, of bodies of men who draw together in conference.

Conference Always Modifies and Improves Thought

I would like to ask if this is not the experience of every person here who has ever acted in any conference of any kind. Did you ever go out of a conference with exactly the same views with which you went in? If you did, I am sorry for you; you must be thought-tight. For my part I can testify that I never carried a scheme into a conference without having it profoundly modified by the criticism of the other men in the conference and without recognizing when I came out that the product of the common council bestowed upon it was very much superior to any private thought that might have been used for its development. The processes of attrition, the contributions to consensus of minds, the compromises of thought create those general movements which are the streams of tendency and the streams of development.

Will Make Easier Solution of Great Problems

And so it seems to me that what is going to be produced by this movement — not all at once, by slow and tedious stages, no doubt, but nevertheless very certainly in the end — is in the first place a release of common forces now undiscovered, now somewhere banked up, and now somewhere unavailable, the removal of barriers to the common understanding, the opening of mind to mind, the clarification of the air and the release in that clarified air of forces that can live in it, and just so certainly as you release those forces you make easier the fundamental problem of modern society, which is the problem of accommodating the various interests in modern society to one another.

Adjustment Necessary to Liberty

I used to teach my classes in the university that liberty was a matter of adjustment, and I was accustomed to illustrate it in this way: When you have perfectly assembled the parts of a great steam engine, for example, then when it runs, you say that it runs free; that means that the adjustment is so perfect that the friction is reduced to a minimum, doesn't it? And the minute you twist any part out of alignment, the minute you lose adjustment, then there is a buckling up and the whole thing is rigid and useless. Now, to my mind, that is the image of human liberty; the individual is free in proportion to his perfect accommodation to the whole, or, to put it the other way, in proportion to the perfect adjustment of the whole to his life and interests.

Take another illustration. You are sailing a boat. When do you say that she is running free, when you have thrown her up into the wind? No; not at all. Every stick and stitch in her shivers, and you say she is in irons. Nature has grasped her and says, "You cannot go that way." But let her fall off, let the sheets fill, and see her run like a bird

skimming the waters. Why is she free? Because she has adjusted herself to the great force of nature that is brewed with the breath of the wind. She is free in proportion as she is adjusted, as she is obedient, and so men are free in society in proportion as their interests are accommodated to one another, and that is the problem of liberty.

Analysis Accomplished — now Assembled

Liberty as now expressed is unsatisfactory in this country and in other countries because there has not been a satisfactory adjustment, and you cannot readjust the parts until you analyze them. Very well, we have analyzed them. Now, this movement is intended to contribute to an effort to assemble them, bring them together, let them look one another in the face, let them reckon with one another, and then they will coöperate, and not before.

You cannot bring adjustment into play until you have got the consent of the parts to act together, and then, when you have got the adjustment, when you have discovered and released those forces and they have accommodated themselves to each other, you have that control which is the sovereignty of the people.

There is no sovereignty of the people if the several sections of the people be at loggerheads with one another. Sovereignty comes with coöperation; sovereignty comes with mutual protection; sovereignty comes with the quick pulses of sympathy; sovereignty comes by a common impulse.

You say, and all men say, that great political changes are impending in this country. Why do you say so? Because everywhere you go you find men expressing the same judgment, alive to the same circumstances, determined to solve the problems by acting together, no matter what older bonds they may break, no matter what former prepossessions they may throw off, determined to get together and do the thing.

Enlightened Control in Place of Management

And so you know that changes are impending because what was a body of scattered sentiment is now becoming a concentrated force, and so with sympathy and understanding comes control, for, in place of this control of enlightened and sovereign opinions, we have had in the field of politics, as elsewhere, the reign of management, and management is compounded of these two things, secrecy plus concentration.

You cannot manage a nation, you cannot manage the people of a State, you cannot manage a great population, you can manage only some central force. What you do, therefore, if you want to manage in politics or anywhere else, is to choose a great single force or single group of forces and then find some man or men sagacious and secretive enough to manage the business without being discovered. And that has been done for a generation in the United States.

Now, the schoolhouse, among other things, is going to break that up. Is it not significant that this thing is being erected upon the foundation originally laid in America, where we saw from the first that the schoolhouse and the church were to be the pillars of the Republic? Is it not significant that, as if by instinct, we return to those sources of liberty undefiled which we find in the common meeting place — in the place owned by everybody, in the place where nobody can be excluded, in the place to which everybody comes as by right?

And so what we are doing is simply to open what was shut, to let the light come in upon places that were dark, to substitute for locked doors open doors, for it does not make any difference how many or how few come in provided anybody who chooses may come in. So, as soon as you have established that principle, you have openings, and these doors are open as if they were the floodgates of life.

Faith in People Justified

I do not wonder that men are exhibiting an increased confidence in the judgments of the people, because wherever you give the people a chance, such as this movement has given them in the schoolhouse, they avail themselves of it. This is not a false people, this is not a people guided by blind impulses, this is a people who want to think, who want to think right, whose feelings are based upon justice, whose instincts are for fairness and for the light.

So what I see in this movement is a recovery of the constructive and creative genius of the American people, because the American people as a people are so far different from others in being able to produce new things, to create new things out of old.

This Movement Fundamentally American

I have often thought that we overlook the fact that the real sources of strength in the community come from the bottom. Do you find society renewing itself from the top? Don't you find society renewing itself from the ranks of unknown men? Do you look to the leading families to go on leading you? Do you look to the ranks of the men already established in authority to contribute sons to lead the next generation? They may, sometimes they do, but you can't count on them; and what you are constantly depending on is the rise out of the ranks of unknown men, the discovery of men whom you had passed by, the sudden disclosure of capacity you had not dreamed of, the emergence of somebody from some place of which you had thought the least, of some man unanointed from on high, to do the thing that the generation calls for. Who would have looked to see Lincoln save a nation? Who that knew Lincoln when he was a lad and a youth and a young man — but all the while there was springing up in him as if he were connected with the very soil itself,

the sap of a nation, the vision of a great people, a sympathy so ingrained and intimate with the common run of men that he was like the people impersonated, sublimated, touched with genius. And it is to such sources that we must always look.

No man can calculate the courses of genius, no man can foretell the leadership of nations. And so we must see to it that the bottom is left open, we must see to it that the soil of the common feeling of the common consciousness is always fertile and unclogged, for there can be no fruit unless the roots touch the rich sources of life.

And it seems to me that the schoolhouses dotted here, there, and everywhere, over the great expanse of this Nation, will some day prove to be the roots of that great tree of liberty which shall spread for the sustenance and protection of all mankind.

THE RURAL REFORMATION ¹

ROBERT W. BRUÈRE

WE are in the midst of a rural revolution. The pre-emption of the "area available for agricultural purposes" which, according to the Federal census, was practically complete at the beginning of the new century, has set in motion forces that are swiftly transforming the spirit of American farm life and the character of the economic and social institutions in the open country.

For more than a hundred years — approximately from the time when the embargo of 1807 established the "nursing of infant industries" as our dominant national policy — the industrial revolution, with its teeming commercial and manufacturing centers, has shaped the course of American civilization. Notwithstanding the fact that throughout the nineteenth century the rural population greatly outnumbered the population of the cities, its influence upon national affairs remained definitely secondary. So long as there were millions of acres available for agricultural settlement, the power of the rural majority was subject to ready control. Whenever the farmers attempted to organize, as they did through the Grange in the sixties and seventies, and again through the Populist uprising of the early nineties, their ranks were broken and scattered by the opening of vast reserves of arable land. Effective group action is impossible without stability, an economic surplus, and leisure; cheap lands meant cheap prices for agricultural products; so long as "Uncle Sam was rich enough to give us each a farm," the rural majority could be

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held at an economic, political, and social disadvantage. But the final pre-emption of the "area" available for agricultural purposes has done for the American farmer what powder and the crossbow did for the English yeomen at Crécy. The cheap lands of the Argentine Republic and of Little Russia will not suffice to break their ranks again.

The sign of the new sovereignty is on every one's lips. Not within living memory, certainly not in times of peace, has the high cost of living had such universal currency. Economists tell us that the cause of high prices is to be found in the abnormal increase of the world's gold supply, in the "brigandage of the middleman," in the growth of luxury, the aggressions of labor, and all manner of disturbances in the industrial world. But there is yet another explanation which has not received the consideration its reasonableness demands. In great agricultural states like Illinois and Iowa less land is under cultivation to-day than fourteen years ago; many important counties in states like Ohio are producing less food than they did before the Civil War. During the last census period population in the United States increased 21 per cent, but agricultural production increased 10 per cent only. To meet an increase of 21 per cent in the number of mouths to be fed, the production of wheat increased only 3.8 per cent, of orchard fruits 1.8 per cent, while the production of corn actually fell off by 4.3 per cent. The expert of the census of agriculture, in commenting upon the situation, says:

We have reached a stage in the history of this country when farmers in average years do not produce much more of the raw materials used for food, forage, and clothing than is needed within the country. In poor years the production may not in future equal the demands of the consumers.

And while production has remained stationary, the market value of farm products has practically doubled; while the cities are filled with wailing over high prices, the farmers are

jubilant! Within little more than a decade, the pre-emption of the "area available for agricultural purposes" has shifted the balance of economic control from the cities to the owners of our agricultural lands.

And everywhere the farmers, exhilarated by their new sense of power, are in revolt against the traditional barrenness of agricultural life. Throughout the dominance of the industrial revolution and the era of territorial expansion, they have had to look on from the family circle while the cities sat at the banquet-table of civilization. But their position no longer compels them to listen passively to the pastoral flights of uncalled-for after-dinner speakers. They are in a position to demand what they want. They want homes as comfortable and as well equipped as the best homes in the cities; they want schools that conform to the best modern standards; they want the best facilities for having "a good time"; they want music and art and the drama: they want their full share in all the amenities of twentieth-century civilization. And if they cannot get what they want in the country, they will turn from agricultural production to speculation in land over which they now have a monopolistic control, and move to the cities to get it. All along the line they are in revolt, and already they have reason to wonder at the swiftness with which their rebellion is humbling the cities.

For it is from the cities quite as much as from the farmers themselves that the cry for scientific agriculture, soil conservation, and socialization of rural life is coming. It is city capital that is sending agricultural experts by the hundreds to the tradition-bound fields of the farmers. It is city capital that is promoting country-life conferences with their increasing emphasis upon rural credits and economic coöperation. The cities are quite as keen as the farmers for the establishment of more intimate relations by the extension of the rural mail and the parcels post. And most significant of all, it is principally city money which, through the country-life depart-

ments of the Protestant denominations especially, and the "county work" of the Young Men's and the Young Women's Christian Associations, is supporting the men and women who are effecting a reformation in the country church comparable in scope and depth to the great Reformation of Wyclif and Hus and Luther.

The church has always loomed larger in country than in city life. The city church has been overshadowed by the high-schools and universities, the newspapers and social settlements, the theaters, scientific museums, the ostentatious public and private philanthropies. But the pipes to which the city crowds dance have echoed but faintly in the open country. Throughout the turmoil of the nineteenth century the church remained the dominant social, intellectual, and spiritual institution of rural life.

But within recent years the country church has seen its easy ascendancy threatened by the rivalry of the same secular forces before which the city church has for more than a century retreated as before a conquering enemy. The development of the rural public-school system, the spreading influence of the state universities and colleges, the "extension work" of the state and federal departments of agriculture, the traveling libraries, the automobile, and the motion-picture theaters have brought it face to face with a crisis with which the city church failed to cope. And for a time it showed a disposition to oppose the demands for a fuller life arising out of the rural revolution, as the city church had opposed the "growth of luxury among the common people" arising out of the development of invention and the machine. "The weakness of the city church," says Professor Fagnani, of the Union Theological Seminary, "has been and is that with it religion is religion and not life." And similarly the country church, instead of losing its life in the new movement in order that so it might find it, began by railing against the "Godlessness of the rising generation," when it should have sought the cause of

its waning prestige in the changing wants of the people and its own failure to satisfy them. But this blind policy was proving its own penalty; the countryside was being strewn with the wreckage of abandoned church buildings. And the injury was not to the church alone. As the central institution of country life, the failure of the church to adjust itself to the new conditions was depriving the nation of its most powerful instrument for turning the rural revolution from selfish into patriotic channels. Fortunately, before the damage had become irreparable, the country church developed a new leadership, which, largely financed by city capital, is reforming its methods in statesman-like conformity with the spirit of the times.

The essence of the new reformation is the definite abandonment of authoritarian dogmatism and the candid adoption of the open-minded methods of modern science. In the language of churchmen, they are seeking the will of God, not exclusively in the threshed straw of medieval creeds and scholastic speculations, but primarily in the scientifically ascertained facts of contemporary realities. The best description of the new policy is contained in the series of rural surveys made during the past four years by the Department of Church and Country Life of the Presbyterian Church, under the general supervision of the Rev. Warren H. Wilson.

The Presbyterian Church in the United States [says the introduction to the survey of three rural counties in northern Missouri] has been ministering to country parishes for more than a century. It has sought farmers through forests and across deserts. It has built innumerable little white churches on the country cross-roads for them to worship in. It has baptized the farmer's children, taught them, married and buried them. It has striven to save the farmer's soul — striven earnestly, valiantly, sometimes heroically.

But never until within this year has it made a thorough scientific study of the country community it has attempted to serve. It has done everything in its power to pave the farmer's road to the

Celestial City, but it has paid little attention to his road to the nearest village.

It has given great sums to alleviate poverty, but given little thought to the causes that make for poverty — the American system of farm tenantry, the robbing of the soil, and the stripping the hillside of its trees.

It has pictured the beauties of the heavenly mansions and taken no account of the buildings in which men and women must spend their lives here and now.

Hereafter it is going *to know something about the communities it attempts to serve* — of what stuff they are made, what their needs and aspirations. It will take an interest in the every-day affairs of the farmer — his crops and stock, his buildings and machinery, his lodge and recreation.

The spires of the little cross-road church will still point to the skies, but its foot-stone will lie on the commonplace work of the day.

This declaration of principle is as radical a departure from the prevailing policy of the church in our generation as the declaration of Luther that “a Christian man is a most free lord of all things and subject to no one” was from the autocracy of the medieval hierarchy. It marks the end, so far as the followers of the new reformation are concerned, of the long war between science and the church. And wherever it has been adopted as a guide to action, in poor lands and rich alike, the church is experiencing a renaissance of constructive leadership in both material and spiritual things.

In the course of a recent spring, I traveled by buggy through the poverty-stricken fastnesses of the north Virginia mountains. The dogwood and the crimson Judas trees were in bloom. The upward-winding road was fragrant with sprouting fern, its banks mottled with violets, yellow sorrel bells, and bloodroot blossoms — soft enamel lilies lustrous against the silvery moss. No sharp corners, no checker-board thoroughfares. But the houses I passed in my long climb through the Blue Ridge were, for all their isolation, curiously like the shambling tenements I knew so well in New York, East Boston, South Chicago, and North St. Louis. Women in

drab calicoes stared dumbly from ungarnished kitchen doorways. Toused children fled shyly down the road and hid in thickets and behind tumbling stone fences. Men with rusty guns went by, looking oddly like the men in the urban "bread line," except for a vagrant alertness to the stir of wild life in the brush.

Through Simmon's Gap, along the boulder-strewn bed of a mountain stream, over the hump of a crouching hill, down a steep path broken by gullies and jutting rock, across a plowed field and a half-stumped clearing, I came at last to the Blue Ridge Industrial School and the home of the Rev. George P. Mayo. From the veranda of his house we looked across a valley dotted with orchards, fields of young grain, and soft, green pastures. Beyond the barns and the brook and the meadow to the north, two little white churches confronted each other from opposite sides of a road, like pugilists stripped for a fight.

They were the last survivors of generations of sectarian warfare; all the rest had gone down in the struggle. And while the denominations had fought one another, moonshine had flourished in the mountains, children had been born out of wedlock, boys and girls had grown up innocently dissolute. For all their revival meetings, the "needle's eye" had remained as an open door compared with the mountaineer's chances of entering heaven here or hereafter. They had regularly broken the law to make moonshine whisky because they wanted life, and whisky was the only way they knew to a living. Forty per cent of them had remained illiterate because whisky created neither the desire nor the necessary economic surplus for schools. They had made a virtue of dirt and disease and immorality because the only semblance of spiritual exaltation they had ever experienced came from the momentary thrills of vice. They were criminals for the same reason that the gangs in our city slums are criminals. And the churches, in the intervals of mutual recrimination, preached a flat and

irrelevant goodness, ignoring the causes of the general poverty under the cloud of which they and the people perished.

This was the situation into which Mr. Mayo brought the policy of the new reformation.

"I began," he told me, "with the conviction that the day of doctrinal controversy is over; that the time has come for the church to give an accounting of her stewardship."

The day before, I had come through Shifflet's Hollow, the rugged pocket in the mountains where Mr. Mayo held his first charge. I had seen the Settlement House, the base from which during eight years he had served a territory stretching for twenty miles along the eastern slope of the Greene County range. Adjoining the Settlement House, I had seen the small, well-equipped hospital where scores of mountain men, women, and children had had their first experience of decent care in sickness. Across the road, I had seen the first public school ever opened in the region — built with church money, but operated in coöperation with the state Department of Education. And high up the mountain, on a small plot of relatively smooth soil, I had seen the demonstration acres through which Mr. Mayo had experimentally learned the agricultural possibilities of the mountains.

The outgrowth of those scientific tests of the capacity of both the soil and the people is the Blue Ridge Industrial School, with its demonstration farm of more than five hundred acres; its sawmill and dairy; its dormitories, class-rooms, workshops, and kitchens; its orchards and fields for every grain and grass and fruit that scientific study of the soils and climate has shown to be susceptible of profitable cultivation. Possibly the most striking thing about that splendid church enterprise is the absence of a separate church building. That has been left to the last, because Mr. Mayo has informed the everyday life at the school with the deepest though most unobtrusive religious spirit, and because he believes that the

only sound basis for a vital church to-day is the spontaneous religious emotion of a happy and prosperous people.

During the afternoon I saw fine mountain girls baking bread and studying poultry, mountain boys harrowing after the plow and mending tools in the smithy. And morning and evening I heard them singing together and coöperating in work and in play — mountain girls who, under the old dispensation, might have been mothers at fourteen, whether married or not; and mountain boys who would have become outlaws in the barren solitude of the hills.

And through the children Mr. Mayo is trying to spread the spirit of coöperation and mutual aid throughout the neighborhood. As yet he is not advocating church unity or federation, because this, he fears, would only serve to rekindle the old habit of interdenominational strife. "But," he said to me, "if we are not yet ready to get together inside the church, we can and must get together outside the church as human beings and citizens." And so, while administering his school, he is taking the lead in organizing the people into community associations for the spread of the telephone — the harbinger of the new neighborliness; for the improvement of the roads, the study of markets, coöperation in production, buying, and selling. Every one in Bacon's Hollow — the popular name for the valley — is gradually coming to see that where blue grass grows wild, and apples will ripen, and corn and wheat will yield abundantly, ignorance and moonshine and crime have no providential sanction; that physical vigor and prosperity and happiness are not at variance with the will of God. And the people are gathering in unprecedented number to Mr. Mayo's support, because through him the church has humbled itself, to be reborn in the spirit of science and to win its claim to leadership by the concrete quality of its daily human service.

The Blue Ridge Industrial School is only one of a chain of church enterprises — largely financed with city capital —

that is being stretched through the southern mountains to meet the reproach: "The poor ye have always with you." They are acting as a sort of spiritual middlemen to hitch up the farmers' demand for more life with the cities' demand for more food. With the mountaineers the primary problem is the elimination of poverty, and this the church is helping them to meet by the development of a community social and educational, and an economic programme based upon scientifically ascertained facts.

And the same method is proving effective in the fat lands of the Middle West, though there the problem is of an entirely different character. The people of the Corn-Belt are not crying feebly for enough to eat and to wear, but in powerful, full-fed voices are demanding the higher satisfactions of life — recreation and knowledge and art — and they are demanding these things with the vigor of men who will and do climb into their automobiles and speed away to the town if the mountain of civilization will not come to them. The cityward migration, the growth of tenant farming, land speculation, and absentee landlordism is not only undermining the ancient authority of the country church, but is responsible for the menace to the national food supply.

My train, swinging up into Iowa from the South, found itself on a limitless level. It was May, and the corn, which was later to shoot up into green rockets and burst into tassels of showering gold, was just being planted. Everywhere men and horses dragged slowly back and forth, pulverizing the rich brown bareness or turning under the eager weeds — hungry tramps to be beaten back again and again that the coming corn might be fed. The wheat was well up — great blankets of vivid green, so thick, so lush, that every blade shouldered its neighbor and the roots stole from one another. The fields lying fallow in pasturage were alive with soft, wobbly-kneed calves and the twinkling ears of tiny mule-colts; and hundreds upon hundreds of fat little red or black shoats scampered

away as the train rushed by. Here in the Corn Belt the prayer for daily bread, which is just being raised in the Blue Ridge, has been abundantly fulfilled.

"It is the richest land on God's green earth," said a grizzled, red-cheeked farmer leaning affably over the back of my seat. "Rain or shine, the corn crop ain't never failed in Ioway. Prices been good? Wal, yes, tol'ble; but I don't bother so very much about prices. Where does my money come from? That's my land over yonder where you see that maple wind-break. I go out to see my man that I got working it about every month or so. Forty year ago when I come out here you could get all of that land you might want for seven dollars an acre. It's worth from twenty to thirty times that now. I owned a thousand acres once, but I sold off all but a section and moved up to town. My man he works it on half-shares. But I ain't worrying much about prices; all I got to do is just to sit tight!"

Sitting tight — especially after moving to town — has come to be an immensely popular occupation in the Corn Belt. The farmers who have what money they want take the shortest cut to the satisfactions of life, secure in the knowledge that there are no more vast "areas available for agricultural purposes" to break the market for their land. And real-estate speculation and farming on shares have such obvious advantages over the rough work of plowing and sowing and reaping! Speculation is rife throughout the Corn Belt and production is at a standstill. In Iowa, for example, there were 11,578 fewer farms in 1910 than in 1900, and 406,353 fewer acres under cultivation. And whereas a short while ago practically all of the farms were worked by their owners, from two-fifths to a half, and in some sections seventy per cent of the farms are worked by tenants, who, having a one-year lease, are compelled to rob the soil to get a living. The effects of this revolution, both upon the church and the nation, are described as follows in the survey of forty-four

rural communities in Illinois made by the Presbyterian Church:

Only a few years ago this region was entirely farmed by the owners themselves, but within the past few years many of the owners have moved to the cities and towns or sold their farms to speculators, until now fifty-three per cent of the farms are run by tenants. These tenants have generally a one-year lease; their chance of purchasing land is very small, and their interest in the community is therefore at the lowest point.

In a community where the churches are struggling hard to survive, a farmer said that fifteen years ago his land was producing ninety bushels of corn per acre; now it is producing forty-eight. Then it was worth seventy-five dollars an acre; now it is worth one hundred and ninety dollars an acre.

The speculative price of land kills the country church. The middle-Illinois landlord is not a friend of the improvement of the country community. In many cases he is a mere absentee, drawing rent from the farm he owns, and caring nothing save for the increasing of his rent with the rising price of land. These landlords should be called to account by the churches.

Owners of land in a country where the soil is producing less every year, where the churches and schools are deteriorating, where the human stock is being exploited and an American peasantry produced, are responsible men. Mere evangelism, with talks about saving of souls and promise of heavenly life, is not enough; in such a situation the unlimited promise of heavenly salvation is false to the kingdom.

In self-defense, the Illinois country churches will be forced in the future to promote the conservation of the soil. If they do not save the soil, they will lose the right to save the soul.

There is a refreshing courage about this indictment of the past failure of the church by a churchman. For it must be remembered that the deterioration of rural life here described took place while the church was the dominant institution in the open country. The development of absentee landlordism is in large measure due to the neglect of the church to enter into the spirit of contemporary realities and to take the leadership in creating social and intellectual conditions in the country that would have held the owners upon the land.

During the early stages of the rural revolution, the church, instead of setting an example of coöperation and broadly humanitarian patriotism, followed the precedent of the city church in concentrating its energies upon a short-sighted effort to preserve its institutional integrity. Instead of making all other considerations secondary to the social, economic, and spiritual advancement of the rural communities, it fostered a petulant selfishness by the evil example of its own inter-denominational strife. The Presbyterian survey of three typical agricultural counties in Indiana reveals forty-one denominations quarreling for the possession of a population which in 1900 numbered eighty thousand souls, but which in 1910 had dropped to seventy-six thousand. The records of 232 churches for the past ten years show 38.6 per cent growing, 13.6 per cent standing still, and 47.8 per cent losing ground or dead.

"It is true," says the author of the survey, "that many of these churches need to die," because many of them were built in the first instance to despise denominational rivals, not to serve either man or God. But many of them continue to fail because they place their entire emphasis upon stupid denominational bigotry. As the survey puts it:

Denominational strife shows itself in various ways. At its worst it may be seen in the competition of two or more churches for converts and in the jealousy of one church over the success of others in revival meetings. Three such churches were found in a village of seven hundred. The Methodists were accused of proselyting. The United Brethren were censured for building a church when it was neither needed nor wanted. Both had some grievances against the Disciples. One of the ministers, speaking of the success of his work, said: "I have taken in 113 members in my three churches this year, and 35 of them have come from other denominations." A certain inhabitant of the village—no doubt an ardent church member—said that "if the Methodist church were on fire, and if he should happen to pass by, and if there were a bucket of water standing near, he would kick the bucket over!"

Is there reason to wonder that of ninety-one churches in one of these counties twenty-five have not a single young man under twenty-one years of age in their congregations? Such conduct on the part of an institution which should have been the leader in the socialization of rural morality — a course upon which its own life and the healthy prosperity of the rural community depended — has tended to aggravate the worst evils attending the changing rural order. The Indiana survey thus summarizes the matter:

The influence of the church on the community is individualistic; that is, its chief care is for individual souls. Few churches have as their mission the salvation of the community. The saving of men for heaven is much emphasized — with what results the incident of the bucket of water illustrates. The saving of men for Indiana receives little emphasis. The saving of Indiana for men receives from the churches practically no emphasis at all.

But a church which can so clearly diagnose its own malady is not likely to miss a cure. In the Salt River parish in Missouri, the churches of all denominations have united in a plan of reorganization; they are abandoning superfluous churches and are consolidating weak churches of one denomination with weak churches of another. Certain churches in Pennsylvania are preaching the gospel of the agricultural colleges, realizing that their own future is bound up with better farming. In the middle of the Corn Belt I visited a little Baptist church, which has been able to organize the social and intellectual life of the open country about it so that it draws members from the nearest towns instead of losing to them, and has actually succeeded in stemming the rising tide of tenant farming. The people there are prosperous, the land is rich; but six years ago seven out of ten farms on the road on which the church stands changed hands within a year, and the church fell into decay. Then a new minister was sent to them who had in him the spirit of the new reformation. He began by gathering the people of the neighborhood into a

singing-club, a non-sectarian form of amusement which the nearest town could not match. Through this singing-club the church developed literary and industrial branches, held picnics, established an orchestra, carried through a fair, supported a lecture course, and organized an inter-township school contest and annual athletic meet. These were new forms of religious activity; they gave the people a better quality of amusement than they could get in the nearest town, and the fact that the townspeople came out to their socialized church helped to show them how valuable it was. There is something interesting going on all the time; their imaginations are alive; and the man who rents his farm and goes to town is not so much envied as blamed.

"You'd think he'd do better by his boys than to leave them hanging around Main Street all the time."

"Look at how his land is getting all run down — the way his renter don't manure it."

"He may not have much to do; but I can't see what he gets out of living in town."

This was a new sort of comment, directly traceable to the fact that one little country church had based its teaching on the holiness of this world and made life interesting by feeding the socially hungry and cheering the intellectually faint.

On the June Sunday when I attended service at this church, the automobiles and the fine horses of these prosperous farmers and the town folks from six miles away filled the carriage-sheds and monopolized the fence-posts. And the congregation, made up from a half-dozen old-line denominations, filled the flower-trimmed, newly painted church building to the very doors. No one had preached church federation; it had come about spontaneously!

Farther north, I found a young clergyman who had organized a baseball team in the neighborhood, on which he was pitcher, and which played every Saturday afternoon, to the joy of the whole county. In Wisconsin and Dakota there are

clergymen who have organized the people into coöperative associations for buying and selling, in order that through coöperative business they may have a daily practical illustration of the Golden Rule. In the country town of Pine Island, Minnesota, I attended a moving-picture show, run in the local opera-house by the board of directors of the Methodist church. As the pastor explained it, the theory was that the young people and the isolated farmers of the district must have the best recreation that could be supplied.

Such church activities are springing up in spots throughout the open country; but in many places it seems easier to develop a new institution to meet the rising demands of the farming population than to reform the stiff-necked churches directly. The young people who have left the churches of the old order to the generation that grew up in them — who, like the Chinese, see more likeness than difference between Baptists and Presbyterians, and have not acquired religion through the revival meeting and mourners' bench, but have graduated into Christianity from the Sunday-school — cannot be brought to see religion in sectarian terms. It is because the Young Men's and Young Women's Christian Associations serve the purposes of the rural revolution outside of denominational lines, that they are proving such valuable aids to the new reformation. The idea that the Christian exists in a sort of social vacuum no longer obtains to-day.

"It makes a great appeal to the girls," a worker in Red Wing, Minnesota, told me — "the idea that by joining the Y. W. C. A. they come in touch, not only with the girls of New York and San Francisco, but of India and China, too."

The secretaries of the rural Y. M. C. A. declare that "the inherent organization germ of their work is social," and that their programmes include, not only Bible study and religious meetings, but also "practical talks, lectures, educational classes, agricultural institutes and contests, literary and de-

bating clubs, boy scouts, athletics, gymnastics and aquatics, summer camps, hikes, educational tours, and conferences."

It is because the demands of the revolting farmers include these social satisfactions that can be had only after prosperity and a certain intellectual freedom have been attained that these extra-denominational associations are doing such effective work. They command secretaries of special training such as is generally outside the requirements for the ministry. The churches accept ministers whose preparation varies from a bachelor's degree supplemented by a theological course and an assistant pastorate to what is vaguely called "some personal religious experience." This may or may not be enough; but the Y. M. C. A. takes no such chances. The international secretary says, "It is not sufficient that the county secretary should be a successful evangelist, Bible teacher, or executive." The Association's aim is to provide nothing but college men, preferably graduates of the agricultural colleges. Is it not possibly because of this different training that the average salary of all ministers of all denominations in places with less than twenty-five thousand inhabitants is \$573 a year, while the county secretaries can and do command, at the start, salaries averaging \$1,400?

The leaders in the new reformation are reminding the church that since it has developed a paid ministry, society has also developed a utilitarian civilization and has grown to expect every adult male, parsons included, to earn his keep. They are urging the church to think, not in terms of one person at a time, but of the whole social body at once; to preach, not a religion of the individual, but a religion of the social order. They are meeting with opposition, as Wyclif and Hus and Luther met with opposition; but the future of the country church is with them, because they have made themselves an essential force in this vitally progressive rural revolution.

PROBLEMS OF RURAL SOCIAL LIFE¹

THOMAS NIXON CARVER

No other problem is even second in importance to that of maintaining the native quality of the rural population. The rural districts are the seed bed from which even the cities are stocked with people. Upon the character of this stock, more than upon anything else, does the greatness of a nation and the quality of its civilization ultimately depend. If the native vigor, physical and mental, of the people should decline, nothing could save its civilization from decay. Not even education itself can permanently arrest such decay when the inborn capacity to be educated is disappearing. Every horseman believes in careful training as a preparation for racing, but no horseman, no matter how excellent his system of training might be, would expect to maintain or improve the speed of his stable if he bred mainly from scrub stock. Nor should any country, however excellent its educational system, expect to maintain the capacity and productive efficiency of its people if the most capable and efficient of them multiply least rapidly, and the least capable and efficient multiply most rapidly.

But what is really meant by capacity and productive efficiency in a people? There is a story of an aged savage who, having lived most of his life among civilized men, returned in his old age to his native tribe, saying that he had tried civilization for forty years, and that it was not worth the trouble. A great deal of the philosophy of civilization is epitomized in this story. To a savage mind civilization is never

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worth the trouble, for the reason that taking trouble is distasteful to the savage mind. Only those races which have the capacity for taking trouble, or to whom taking trouble is not painful, are capable of becoming civilized. Civilization consists largely in taking pains. To some people it is too much trouble. They prefer to remain barbarians, even though they live in civilized surroundings. Other people have so much mental energy that they do not mind taking pains; in fact they rather enjoy it. They are the builders of our civilization. Individual genius was once defined as the capacity for taking infinite pains. The genius of a race or of a nation, and its capacity for civilization, may be defined in precisely the same terms.

Efficient agriculture requires forethought, planning for next year, and the year after, and the year after that; putting in a great deal of careful, painstaking work to-day, with no prospect of seeing a tangible result for years to come; looking after an interminable number of details day by day, week by week, month by month, and year by year, in expectation of returns so distant in the future as to lie beyond the vision of lesser minds. Only the men or the races which possess this kind of capacity are capable of efficient agriculture or of efficient industry of any kind. Whatever other admirable qualities the savage may possess, — and he may possibly boast superiority over the civilized man in many respects, — lacking these qualities, he will remain a beaten race. Similarly, whatever admirable and amiable qualities an individual of our own race may possess, lacking these he will be a beaten man. It is idle for either a race or an individual to complain, or to say that in some other kind of a world it would not have been beaten. This happens to be this kind of a world, and in this kind of a world it happens that success comes to those races which possess in the highest degree the economic virtues of industry, sobriety, thrift, forethought, reliability, knowledge of natural laws, and mutual helpfulness. These are the

qualities which bring success to a race or a nation, and the possession of these qualities constitutes, therefore, what we call capacity and efficiency. We may persuade ourselves that we like other qualities or people who possess them, but nature pays very little attention to our likes and dislikes in such matters. However much we may like other qualities, the peoples who lack these qualities will fail; and however much we may persuade ourselves that we despise the sober, homely, economic virtues, the peoples who possess them will succeed and eventually dominate the world.

The problem of maintaining the capacity of the rural population for civilization will depend upon two questions: (1) Is it the most or the least capable individuals who marry earliest and have the largest families? (2) Is it the most or the least capable individuals who leave the farms and migrate to the cities?

Ideally it would seem as though the most capable young men should arrive first at a position of independence, where it would be possible to marry and settle down to the work of building up an estate and a family. Where social ideals are sound this is doubtless the case; but where they are unsound it is otherwise. Where the social ideals are such that it is regarded as an honorable ambition — as the most honorable ambition, in fact — to found a family, with a family estate to support it, or to perpetuate a family already honorably established, and to maintain its standards and traditions, the capable young men will be guided by this ideal, and the most capable of them will succeed best in realizing it. But where the end and aim of economic life centers in the gratification of the senses or of individual vanity, in attracting public notice because of individual achievement in fashionable society, in art, literature, or scholarship, or in any other of the so-called polite pursuits, the family ideal is lost from sight. Under such circumstances, there is a tendency to look upon achievement in some of these directions as an end

in itself, rather than as a means of family building; to assume that an honorable ambition is realized when success along these other lines is attained, regardless of the fate of the family ideal. Such perverted social ideals are likely to prove disastrous to the race, because they lead the capable young men and women to follow those other ambitions and to abandon that of the family builder.

The Family Builder

The general abandonment of the ambition of the family builder will prove disastrous to the race for several reasons. In the first place, it leads capable and ambitious young men to choose their wives for other reasons than their capacity as mothers. The man whose ideal of life centers in individual gratification will, if he is successful enough in an economic sense to give him some opportunity for choice in the matter, choose a wife on the ground of her capacity to minister to his vanity or to his sensuality; to choose one, for example, who will help him in fashionable society, whose face will please his fancy, etc. The man whose dominant ambition is to found a splendid family, or to achieve immortality by leaving behind him a family of capable children, well trained and disciplined for the battle of life, and dominated by high ideals of morality, patriotism, etc., will choose a wife who is capable of helping him to achieve that ambition. She must be sound physically and capable of bearing and nursing healthy children; she must also be possessed of unusual mental power, and therefore capable of transmitting that mental power to her children; and, finally, she must be dominated by high ideals of morality and social service, in order that she may give her time and strength unsparingly to the task of training her children for good citizenship. When the family-building ambition dominates the people, this is the kind of woman who will be most sought after in marriage, who will least frequently remain unmarried and childless, who will marry earliest and therefore

have the longest child-bearing period, and who will get the most capable and vigorous husbands, and therefore bear the most capable and vigorous children. Where different ideals prevail, a different type of woman will be most sought after in marriage. Women weaker physically, mentally, and morally may satisfy other desires better than the type just described; consequently the stronger type of women will be more likely to remain unmarried and childless, or to marry later and therefore have a shorter child-bearing period, or to get less capable and vigorous husbands and therefore bear less capable and vigorous children. In addition to all this, where other than the family ideal dominates marriage, there will be more childless marriages.

The country which maintains the soundest ideals and ambitions in the way of family building will be the country peopled with the strongest and most capable citizens. The country with the strongest and most capable citizenship will be the strongest and the most prosperous country. Since the citizenship of the country is, in the end, recruited mainly from the rural districts, it is especially important that sound ideals should predominate there. To fail in this respect is, eventually, to fail in everything. Therefore there need not be the slightest hesitation in saying that the most important ambition which can be cherished in the country is the ambition of every capable man and woman to found or perpetuate an honorable, capable, and vigorous family. The aim of successful agriculture should be to enable the successful agriculturist to maintain a family estate for the support and perpetuation of such a family. Nothing could be more disastrous than the idea that successful agriculture, or a rich farm, was an end in itself, or that it was a means to any such end as sensual gratification, personal vanity or ostentation, or more luxurious ease.

Rural Migration

Next in importance to the character of the family ideal as a factor in race building is the character of rural migration. If it should happen that the most vigorous, capable, and enterprising youths should continually leave the country for the city, there to become sterilized, as is usually the case, through the pursuit of sensuality, vanity, or false ambition, only one result would be possible. The less vigorous, capable, and enterprising youths being left in the country, there to marry and bring up families, and the same process of selection going on generation after generation, the quality of the rural population would inevitably deteriorate. This would happen as certainly as it would if a horse or cattle breeder should follow the practice of selling his best animals and keeping the inferior ones for breeding purposes. If such a breeder should continue this practice, he would eventually have no first-rate animals to sell. Similarly, if the rural population should degenerate, there would eventually be no superior men and women to send to the cities, and the cities themselves would then degenerate. But if it should happen that the best, the strongest, the most intelligent, and the most enterprising youths should stay in the country, and the inferior ones should be sent to the cities to be sterilized by false ambitions, then it would follow that the quality of the rural population would improve. So long as the rural population is improving there is no danger of national decay or weakness, or of a decline of civilization. It is therefore of great importance that the farms shall retain at least their fair share of the talent of the country.

In order that young men and women of talent and capacity may be induced to remain on the farms, rural life must be made attractive to them. Farm life cannot be attractive to such men and women unless it offers opportunities for a liberal material income, for agreeable social life, and for intellectual and æsthetic enjoyment.

An Adequate Income

The problem of securing an adequate income to the farmer's family is partly a problem of securing an adequate supply of land and capital for them. There is very little in the peasant type of farming, where the farmer is so inadequately supplied with land as to make efficient agriculture impossible, and where even machinery and good teams are unprofitable, to attract men and women of high spirit and enterprise. This is the type of farming, however, which would be forced upon us if the agricultural population should increase in such a way as to bring about a continuous *morcellement*, or subdivision of farms into smaller and smaller units. Such an increase in the number of the rural population would therefore inevitably result in a decline in its quality, because such petty farming, being unattractive to men and women of capacity for larger things, would drive them cityward and leave in the country only the type fitted for small affairs.

This presents a phase of the problem of rural depopulation which is too frequently overlooked. Where the decline in numbers comes about as a result of a readjustment of agricultural methods, it may be, in the end, a good thing. Where the farms have proved too small for the most efficient agriculture, and where therefore the owners of small farms find them so unprofitable as to be induced either to buy out their neighbors or to sell out to them, the result is larger farms and a smaller number of farmers. If the change results in making farming more attractive to men and women of capacity, and in keeping such people on the farms, the decline in numbers is compensated for by a permanent improvement in quality. They who believe that quality is more important than quantity must approve the change.

Fortunately the transfer of land is so easy and inexpensive in this country as yet, especially in the newer states, that there are no serious obstacles in the way of this process

Where the farms are either too small or too large to secure their highest value, they tend to be combined in the former case, or to be subdivided in the latter, until they approximate the size which gives them greatest value. The reason why this process does not go on in the same way in some of the older countries is because of the difficulties in the way of transferring land. The long history of a given title, the vast number of complicated legal rights and claims which may have accrued, the ridiculously pious care with which even the most remote rights of distant relatives are guarded by the courts, make the process of transferring a piece of land a formidable task.

Where, however, rural depopulation results in the sheer abandonment of the land and allowing it to go to waste, the problem is somewhat different. Even though the land is so poor as to attract only a poor grade of farmers, it may be better to have it occupied by a low-grade population than not to have it occupied at all, though even that is open to question. It is a mistake to assume that all unoccupied land is going to waste. In New England it speedily grows up to timber, and in some cases that is the most productive use to which land can be put. The essential thing to remember is that a dense agricultural population, if that density means a small income per family, invariably means, under modern conditions, a low-grade population, because men and women of spirit and capacity will not stay. They will leave the country districts in the possession of people who can do no better anywhere else, and who are therefore content to remain and accept a low standard of living. But a relatively sparse population, if it means a large income per family, will generally mean a high-grade population, because such conditions will help to attract and hold men and women of spirit and capacity. If we once understand this, we shall not be alarmed over a decline in the rural population until we know the reasons and the results.

Still more important as a means of securing adequate incomes for intelligent farmers is the existence and accessibility of exact scientific knowledge to those who have the capacity to acquire and apply it. Our agricultural colleges, the experiment stations, and the agricultural literature which they are publishing and distributing, all combine to give to the farmer of intelligence a higher differential advantage over the ignoramus. Only the man of intelligence is capable of understanding and applying the results of scientific study and experiment. He is the man who will profit most, therefore, and who will in the end be able to buy out his ignorant neighbor and send him off to town to work under a boss. Such an improvement in our rural population augurs well for the future of the republic.

An Agreeable Social Life

Quite as important as the question of an adequate income is that of an agreeable social life as a means of attracting a superior type of men and women to the farms. Few people realize how much more dependent the farmer is than any one else upon his social surroundings. A business man in the city can choose his neighbors without changing his place of business, for the reason that his residence and his place of business are entirely disconnected. If he does not like one neighborhood as a place of residence and a place in which to bring up his family, he can move to another without disturbing his business relations. The farmer must live on his farm and must bring up his children there. Whatever the social surroundings of the neighborhood are, he must accept them or else sell out and move, thus upsetting all his business relations and hazarding his business prosperity on the chance of improving his social relations. Again, the man in the city is usually within easy reach of a great variety of schools, churches, and other social agencies. If one does not suit him, he can make use of another without great inconvenience.

In the country, where all such things are farther apart, it would ordinarily be a great inconvenience to send his children to any other school than the one belonging to his own district, or to take his family to another church than one of those of the neighborhood. Again, even though the city man does not choose his place of residence wisely, he is not dependent upon his neighbors for his social life. Where the neighborhood idea does not prevail, as it usually does not in the city, one may ignore his own neighbors and still have an agreeable social life among the members of his class, trade, occupation, or club. This is probably, in the end, a vicious tendency, but it does, at any rate, help to make the city man relatively independent of the social conditions of his immediate neighborhood. But the farmer cannot pick and choose in this way. Perhaps it is well that he should not, but this at least shows that he is dependent upon his neighborhood. As a result of this dependence he is compelled, more than any other class of men, to take an interest in neighborhood affairs. The safety and well-being of his own family depend upon his having good neighbors and good moral and social conditions within his neighborhood. This is doubtless a good thing in the end, because it forces him, if he is interested in his family and the future careers of his children, to give time and energy to the work of neighborhood improvement. But temporarily it may be a hardship to the man of clean habits and sound principles, because, before he can get the neighborhood cleaned up, his family may have suffered from the lack of a wholesome social life.

Whatever may be said upon that point, it can scarcely be denied that the farmer, more than any one else, has reason to take an active interest in the local church, the school, the grange, the library, local sports, and every other agency which may contribute to the social life of the neighborhood. If he allows these things to degenerate, it will profit him little to have come into possession of broad acres, to have grown big crops, and to have built big barns to hold them.

The Country Church

Among the agencies for the building up of a wholesome social life in the country the rural church deserves first mention; if for no other reason, because it is the oldest. Unfortunately there has been a close parallelism between the practices of the rural churches in America and the type of agriculture which has prevailed. In the pioneering stage agriculture has consisted mainly in harvesting the soil, and very little attention has been paid to soil building. Similarly, the pioneering churches have too generally followed the plan of harvesting a membership by revivalistic methods and have given too little attention to membership building. A certain pioneer preacher, of picturesque fame, was once reported to have opposed the education of men for the ministry on the ground that there were plenty of well-educated men to be had, and if the Lord wanted an educated minister all he needed to do was to seize upon one of these educated sinners and shake him over the pit until he came to his senses and agreed to preach the gospel. Fortunately this argument did not prevail; but it has looked, at times, as though some of the more popular churches have relied upon a similar policy for the recruiting of their membership. They seem to have relied more upon the making of converts from among mature reprobates than upon the training of successive generations of boys and girls into good,* mutually helpful neighbors; into productive, efficient, prosperous farmers; in short, into good substantial citizens such as build up a community, increase the productivity of its farms, and make it a desirable place in which to live.

However, things are improving in one respect at least, and the pioneering stage of church activity is giving way to a more permanent and constructive form of church activity. The transition period, however, is a critical one, and in many cases there appears to be an inability on the part of the country church to live through it.

One serious danger, against which the warning cannot be made too strong, is the snare of a sentimental type of spirituality, a kind of spirituality which wastes itself in mere æsthetic or emotional enjoyment — a kind of spiritual Sybaritism. The church which yields to this temptation, and cultivates a form of religious emotionalism as an end in itself, will fail; and it will deserve to fail because it will be of no use to its members or to the world. The church which realizes that its spirituality must meet the practical test of productivity; that its members must be made better farmers and better citizens generally by reason of their spirituality; that the more religious they are the better crops they will grow, the better stock they will keep, the better care they will give it, and the better neighbors they will be, is the church which will deserve to succeed and in the end will succeed.

It may be laid down as a general law of rural economy that the productive land in any farming community will tend to pass more and more into the hands of those who can cultivate it most efficiently, — that is, into the hands of the most efficient farmers, — unless it is prevented from doing so by some kind of military force exercised by an aristocratic ruling class, or by an expensive and cumbersome system of transferring land titles. In a democratic country like the United States, where there are few impediments in the way of the free transfer of land, we need look for nothing else. The men who can make the land produce the most will be able to pay the most for it, and in the end they will get it and hold it. This looks simple enough, no doubt, and may not at first seem to signify much, but it is weighted with consequences of the most stupendous and far-reaching character, — consequences which it would be suicidal for the church to ignore.

It means simply and literally that the rural districts are never to be thoroughly Christianized until Christians become, as a rule, better farmers than non-Christians. If it should happen that Christians should really become better farmers

than non-Christians, the land will pass more and more into the possession of Christians, and this will become a Christian country, at least so far as the rural districts are concerned. The first result would probably be to paganize the cities, since the non-Christians displaced from the rural districts by their superior competitors would take refuge in the towns. But since nature has a way of exterminating town populations in three or four generations, and the towns have therefore to be continuously recruited from the country, the Christianizing of the rural districts would eventually mean the Christianizing of the towns also. But, vice versa, if non-Christians should become the better farmers, by reason of some false philosophy or supercilious attitude toward material wealth and economic achievement on the part of the church, then this would eventually become a non-Christian country for the same reason.

But if, as a third possibility, there should be no perceptible difference between Christians and non-Christians as to their knowledge and adaptability, or as to their general fitness to survive and possess the earth; — fitness, that is, as determined by nature's standard rather than by some artificial standard of our own devising, — the result would be that Christians would remain indefinitely a mere sect in the midst of a non-Christian or nondescript population. The only way of avoiding this rather unsatisfactory situation would be to force the whole population into a nominal Christianity by military force. But, assuming that physical force is not to be used, and that the ordinary economic forces are to operate undisturbed by such violent means, then the contention will hold. This is what is likely to happen if certain religious leaders should succeed in identifying Christianity with millinery, with emotionalism, with abstract formulæ respecting the invisible world, or with mere loyalty to an organization, rather than with rational conduct. By rational conduct is meant that kind of conduct which conserves human energy and enables men to fulfill their mission of subduing the earth

and ruling over it, which enables them to survive in the struggle with nature. This is the essence of all genuine morality.

If the significance of this law is once clearly understood, there is little danger that the church will make the wrong choice or hesitate long in making the right one. It would at once decide to make better farmers of its rural members than non-members can possibly become, since non-members would lack the stimulating influences which go with membership. The only danger is that the churches, some of them at least, will fail to see the point, or refuse to see it, and continue to hug the delusion that they are under the guidance of a higher power than political economy, and may therefore safely ignore its laws. That would be a delusion, because a law is a law, and the words higher and lower have no application. To believe that there may be a conflict between divine law and physical law, or between divine law and economic law, is to believe that this is an irrational universe, at war with itself. Moreover, we must form our conclusions as to the will of God and the duty of man on the basis of the observed facts and uniformities of the world of actual experience; and the laws of political economy are among these observed uniformities. Our only way of knowing that we are in tune with the Infinite is by observing that we are in tune with the finite; and we cannot possibly be in tune with the finite unless we act in harmony with known physical and economic laws.

There may be some excellent people who hold that it should not be the mission of the church to make good farmers, but to convert to Christianity those who are already good farmers. Reliance upon the process of conversion may appeal to some as the right policy for the church to pursue; but unless conversion means increased efficiency, greater adaptability, greater fitness for the struggle for existence, better conservation of human energy, the church can scarcely hold the ground

which it wins by that process, but will be continually losing ground through economic competition with the more efficient non-Christians.

But if this is a rational universe, must we not conclude that any religion or any religious movement, however attractive it may seem, is proved a false religion or a misdirected religious movement, which does not increase the capacity of its followers to control the forces of nature, to dominate the earth and to rule over it, which does not increase their adaptability, which does not make the nation which adopts it a prosperous nation? Conversely, must we not conclude, assuming still a rational universe, that that is a true religion which, if adopted by a whole community or a whole nation, would increase the adaptability of that community or that nation and enable it to subjugate the earth and to outgrow both in power and wealth, in comfort and prosperity, the nation which does not adopt it? The alternative to this conclusion would seem to be to fall back upon the concept of an irrational universe, on the belief that this world is Satan's world, in conflict with God's law, instead of God's world in harmony with itself.

This doctrine is not so revolutionary as it may seem. Indeed, it is so old-fashioned as to be positively reactionary, and that is why it may seem new and revolutionary to those who have forgotten certain old truths. If it be correct to say that the rural districts will become Christianized only in proportion as Christians become better farmers than non-Christians, it must also be true that whatever permanent success the rural church has had in the past has been due to the same reason, except where force or some other non-economic factor has intervened. Such is, as a matter of fact, the case. In spite of the emphasis of the church upon spirituality, or because of its emphasis upon a sane and wholesome kind of spirituality, men have usually become better farmers under its influence. For, along with certain formalities of belief

and conduct, there has generally been, for one reason or another, considerable emphasis upon the plain economic virtues of industry, sobriety, thrift, forethought, and mutual helpfulness. Wherever there has been a pure and elevated type of Christianity, there Christians have exhibited these virtues in somewhat greater degree than non-Christians. This simply means that they have wasted less of their energy in vice, dissipation, brawling, or in riotous living, than their non-Christian neighbors. Economizing their energy, they were able to prevail over those who wasted theirs. Sometimes, however, war and persecution have been resorted to, to check this economic growth. At other times Christians themselves have resorted to these non-economic methods of gaining ground. But where economic forces have been allowed to work unhindered, and where Christianity has been of a type worth preserving, there it has grown strong by reason of these economic forces alone, and it has not needed to appeal to physical force or to the state to spread itself.

But is not agricultural competition itself a form of war? Certain misinformed philosophers have fallen into the habit of saying so. There is this difference. In war success depends upon the power and the willingness to destroy. In agriculture success depends upon the power and willingness to produce. In war they win who inflict the greatest pain and injury. In agriculture they win who render the greatest utility or service; and to a sober mind this must appear to be a real difference.

But why confine these observations to agriculture and rural economy? Are not the conditions of economic success the same in the city as in the country? And must not religion prevail over irreligion in the city as well as in the country, provided religion secures a greater conservation of human energy than does irreligion? In a certain very broad sense, or in the long run, — with a great deal of emphasis on the word "long," — that is probably true. But the conditions

of individual economic success in cities are so complex, and there are so many opportunities for

ways that are dark
And for tricks that are vain,

as to obscure though not to obliterate entirely the working of this law under which success depends upon productive service.

In agriculture one must wrest a living from nature, and nature cannot be tricked or deluded. But a large element of our city populations — and generally they are the dominant element — get their living out of other people; and people are easily deceived. Instead of laboring to make two blades of grass grow where one had grown before, their business is to make two dollars emerge from other people's pockets where one had emerged before. Neither impudence, nor a smooth tongue, nor a distinguished manner, nor lurid rhetoric ever yet made an acre of land yield a larger crop of grain; but they have frequently made an office, a sanctum, a platform, and even a pulpit yield a larger crop of dollars. They who get their living out of other people must, of necessity, interest those other people; and men are so constituted that queer and abnormal things are more interesting to them than the usual and the normal. They will pay money for the privilege of seeing a two-headed calf, when a normal calf would not interest them at all. The dime-museum freak makes money by showing to our interested gaze his physical abnormalities. He is an economic success in that he makes a good living by it, but it does not follow that he is the type which is fitted to survive, or which religion ought to try to produce. Other men, going under the names of artists, novelists, or dramatists of certain nameless schools, make very good livings by revealing to interested minds their mental and moral abnormalities. They, like the dime-museum freaks, are economic successes in that they make good livings, but it does not follow that they are the type of man fitted to survive, or that religion

ought to try to produce. This type of economic success is an urban rather than a rural one, and it flourishes under urban rather than rural conditions. So long as it flourishes there is no reason why religious men who conserve their energies for productive service should succeed in crowding them out of existence. The only chance of attaining that end will be for religion to give people a saner appreciation of things, teach them to be more interested in normal calves than in two-headed calves, in normal men than in dime-museum freaks, in sane writers than in certain degenerate types now holding the attention of the gaping crowd. If this can be brought about, then it will result that the religious type of man, even in cities, will more and more prevail over the irreligious, provided the religion itself is worth preserving, — that is, provided it becomes a positive factor in the conservation of human energy.

As has already been suggested, there is a great deal more involved in the making of a good farmer than in the teaching of scientific agriculture. Mr. Benjamin Kidd, in his *Social Evolution*, has done well to emphasize the importance of moral qualities as compared with intellectual achievements. In the first place, intellectual achievements, or their results, can only be utilized where there is a sane and wholesome morality as a basis. In the second place, the results of the intellectual achievement of one race or of one man may be borrowed freely by the rest of the world, provided the rest of the world have the moral qualities which will enable them to profit by so doing; whereas moral qualities cannot be borrowed from one race by another. Japan, for example, could easily borrow from European nations the art of modern warfare, together with its instruments of destruction; but she did not borrow, and could not borrow, that splendid courage and discipline which enabled her to utilize so efficiently the inventions which she borrowed. So one nation can easily borrow farm machinery and modern methods of agriculture, but it cannot

borrow the moral qualities which will enable it to profit by them. Saying nothing of mental alertness and willingness to learn, which might be classed as mental rather than moral, it could not borrow that patient spirit of toil, nor that sturdy self-reliance, nor that stern and unrelenting sense of duty, nor that forethought which sacrifices present enjoyment to future profit, nor that spirit of mutual helpfulness, all of which are essential to any effective rural work. Again, a nation cannot easily borrow a sane and sober reason, a willingness to trust to its own care in preparing the soil rather than to the blessing of the priest upon the fields; nor can it borrow a general spirit of enterprise which ventures out upon plans and projects which approve themselves to the reason. And, finally, it cannot borrow that love for the soil, and the great outdoors, and the growing crops, and the domestic animals, which marks every successful rural people. These things have to be developed on the soil, to be bred into the bone and fiber of the people, and they are the first requisites for good farming. After them comes scientific knowledge. In the development of such moral qualities as these the church has been, and may become again, the most effective agency.

Because of such moral qualities as these, the Puritans were able to subdue the New England forest and to build up a great rural civilization on the basis of a sterile soil and an inhospitable climate, and without any great amount of scientific knowledge, though as compared with other communities their knowledge of agriculture was not inferior. They took their work seriously, as befitted those who had such a task before them as the building of a wilderness empire. Their unbending sense of duty and their thrift and foresight have become proverbial, as have their keenness, their alertness, and their humor. But their mutual helpfulness, though less proverbial, is attested by their log-rollings, their house raisings, their husking bees, and the like, making even their pleasures bring them useful results, both material and social,

— material in the sense of having something more substantial than headaches to show for their festivities, social in the sense of having the strongest of all bonds of social sympathy, namely coöperative labor, as the basis of their social enjoyment.

It is said that the great problem of the country church to-day is that of an adequate support of the ministry. How can the ministry be adequately supported? One obvious answer is to reduce the number of churches, where there are too many churches for the community to support. This is a good answer; perhaps that is the easiest way, but it is the second-best way. Another way is to build up the community in order that it may furnish adequate membership and adequate support for all the churches. This may be a harder way, but where it is not impossible it is the best.

There was a time when the finance ministers of European governments were hard pressed to provide a revenue for the expenses of the state. They eventually found that the best way to get adequate support for the state was to increase the prosperity of the country. When they began studying how to make the country prosperous, the science of national economy, or political economy, was born. When they who are charged with the task of raising money for the support of the churches and the ministry awaken to the fact that the best way to secure adequate support is to make the parish more prosperous, the science of parish economy will be born. This will be, for our rural churches, as fortunate an event as the birth of political economy was for modern governments.

Of course there should be continued emphasis, in the teachings of the church and the pulpit, upon the plain economic virtues of industry, sobriety, thrift, practical scientific knowledge, and mutual helpfulness; but much more emphasis than heretofore should be placed on the last two. Practical scientific knowledge of agriculture and mutual helpfulness in the promotion of the welfare of the parish are absolutely essential,

and unless the churches can help in this direction they will remain poor and inadequately supported. For those who think that the church should hold itself above the work of preaching the kind of conduct that pays, or the kind of life that succeeds, the economic law stated above is the strongest argument.

If the kingdom of God is a kingdom of service, these efforts are quite consistent with the mission of the church. If it will seek to serve the community in this way, seeking *first* to be of service, all the other things — that is, sufficient wealth, membership, esteem, etc. — will be added unto it. If, however, it seeks first merely to make proselytes, to increase its membership, or to get money, it will have no reason to expect or deserve permanent success.

Organized efforts in the churches for the study of parish economy, for gaining more and more scientific knowledge of agriculture, for the practical kind of Christian brotherhood which shows itself in the form of mutual helpfulness and coöperation, in the form of decreasing jealousy and suspicion, in the form of greater public spirit, greater alertness for opportunities of promoting the public good and building up the parish and the community, in helping young men and young women to get started in productive work and in home building, in helping the children to get the kind of training which will enable them to make a better living *in the parish*, — efforts of this kind will eventually result in better support for the churches themselves, because the community will then be able to support the church more liberally, and, what is more important, it will then see that the church is worth supporting.

This ideal of a church which makes itself a factor in building up a community, even in material things, is not an impossible ideal. It has been realized in the past and it can be realized again. An illustrious example is that of Jean Frédéric Oberlin, the pastor of the Steinthal. Numberless other examples can

be found in the religious orders of the medieval church, — examples of communities which were made rich and prosperous by the teachings and the example of self-sacrificing leaders. This ideal will, however, never be realized by a church which affects to despise this world and the things of this world, which regards the world itself as lost, and conceives of its own mission as consisting in saving as many individual souls as possible from the wreck.

If the church will assume that the world is not going to perdition, that it is going to last for a long time, and that it will eventually be a Christian or a non-Christian world, according as Christians or non-Christians prove themselves more fit to possess it, — according as they are better farmers, better business men, better mechanics, better politicians, — then the church will turn its attention more and more to the making of better and more progressive farmers, business men, mechanics, and politicians.

What is Social Service?

Much is being said nowadays about social service as the mission of the church. That is, in itself, an excellent thing; but there is a tendency to take too narrow a view of social service, just as there was formerly a tendency to take too narrow a view of spirituality. The result is that as much cant is being preached in the name of social service as ever was preached in the name of spirituality. This is to be expected of those who do not realize that all productive work, such as growing corn, wheat, or cattle, to feed the world, or growing wool or cotton to clothe the world, is social service; and that the best social service which the average man can perform is to do his regular work well, — to grow good crops if he is a farmer, and to bring up his family in habits of industry, sobriety, thrift, reliability, and mutual helpfulness; that anything, in short, is social service which builds up the country and makes it strong, powerful, progressive, and prosperous.

The church which preaches and teaches social service in this broad and constructive sense will become a powerful factor in the progress and prosperity of the country, and is not likely to lack for adequate support.

The dependence of the farmer upon his social surroundings, as previously pointed out, gives the country church a unique opportunity for real service outside the field of agricultural production. The organizations which can supply the farmer and his family with an agreeable social life will supply one of the greatest needs of rural people and will deserve their support. If the church can do this, there need be no rival organization spring up to divide the loyalty and support of the people. If the church does not do it, some other organization will. The need is too great to be left unsatisfied, and will create the means for its own satisfaction.

In order that the country church may contribute its share toward supplying opportunities for a wholesome and agreeable social life, it is not necessary that it undertake an elaborate program of entertainments, concerts, gymnastic classes, etc., though all these things are good in their places. One thing, and only one thing, is essential, though it is sometimes difficult to attain and is always capable of infinite variation. It is essential that people with a common interest should occasionally be brought together, that is, within speaking distance of one another. If that can be done, social life will take care of itself. But it is not always easy to find a common interest. In some times and places theological speculation, in others political or scientific speculation, has so occupied men's minds as to give them an all-absorbing theme of common interest. When they came together their common interests made them agreeable company for one another and gave them ample opportunity for high converse on great themes. Where there is no common and absorbing interest of this kind something must be found or created, otherwise conversation will revolve interminably around such themes as the weather and crops

But it is not at all necessary that conversation should center in speculative themes, either theological, political, or scientific. Problems of parish or neighborhood economy, of rural beautification, are large enough to occupy the time and attention of several generations. The problems of the beautification of rural roads, bridges, schoolhouses and grounds, church grounds, etc., are enough to occupy the spare time and attention of rural America for a hundred years to come. A neighborhood which becomes possessed with a common passion for beautification will never lack for social life. The church which can arouse such an interest as this, or any other equally noble interest, will have gone a long way toward solving the problem of a wholesome and agreeable social life in the country.

But the well-known and regularly established means of social grace must not be overlooked. Most people like to eat and drink, and when they can be brought together around a common table, they have, in a small way at least, every essential of social life; that is, you have your people together with a common interest. From this as a beginning there is possible a vast widening of the social life. It can scarcely be regarded as profane to suggest that we have, in this elementary social principle, one of the great facts of life which are symbolized in the Holy Communion. Again, there are the common social amusements and recreations. Of particular value for rural communities is choral singing, the highest form of social amusement known to man. Where a group of people sing together for their own delectation, rather than for that of an audience, we have one of the best possible solvents of private differences and idiosyncrasies, and one of the highest possible means of promoting a sense of brotherhood and solidarity, as well as one of the oldest and most primitive forms of social communion. Even dancing is not to be despised as a means of grace, where it can be carried on in the proper spirit.

The Example of Denmark

The most remarkable example of agricultural regeneration in modern times is Denmark. In 1864 she was facing national ruin. As the result of a disastrous war, itself a heavy drain upon the country, she had lost some of her best provinces. In addition to this she was obliged to pay a heavy war indemnity. Finally, and worst of all, her German market was cut off by the German tariff wall. But as one result of this accumulation of calamities there was developed an intense feeling of national patriotism and solidarity. Out of this feeling grew a number of coöperative measures for the rebuilding of the country, especially in the field of agriculture. Within fifty years Denmark became the most prosperous country on the continent of Europe, and stands to-day as a monument to the efficiency of the spirit of intelligent coöperation. It is a coöperation not forced upon the people by a government, but a spontaneous coöperation growing out of a general spirit of patriotism and mutual helpfulness. Every student who is intimately acquainted with the history of this movement agrees that the popular recreations and festivities have been powerful factors in creating this spirit, and that the popular songs and hymns, and the habit of singing them together on all occasions, have given to these recreations and festivities a patriotic and religious character which is to be found nowhere else to-day on so large a scale.

Every college student is familiar with the fact that when a body of students unites upon a common interest, like an athletic contest, there is not the slightest difficulty in getting them together, and when they do get together there is not the slightest difficulty in keeping things going. Even singing seems to be a perfectly natural and fitting form of expression. Precisely the same principle has been seen in operation on a larger scale by any one who has lived through a great national crisis, like a war. When the people are intensely interested

in the same thing their gatherings are never dull. Singing together is a natural way of expressing the common feeling, and no one questions its propriety.

The Danish people have demonstrated that it is possible for a whole people to become as thoroughly united and as enthusiastic upon the common interest of agricultural production and national upbuilding as it is for a body of college students to become upon the subject of an athletic contest, or for a nation to become on the subject of war. The church which can give its people or its neighborhood a great and noble enthusiasm like this will have no difficulty in creating a vibrating social life. Then it will not seem out of place, or bad taste, for the people to sing whenever they get together.¹ The absence of any common enthusiasm means a disunited, egoistic, disintegrating social life, compared with which even war, horrible as it is, may be the lesser evil if it results in uniting the people in a common interest and a common cause. Since Denmark has shown that a people may develop a common enthusiasm for the arts of peace, it ought to furnish a basis for a constructive faith in its possibility elsewhere. If the church is not to be the conservator of that constructive kind of faith, where shall we look for it?

The Country School

The country school, though a younger institution than the country church, is regarded by many as the more powerful and influential of the two. It has certain manifest advantages, chief among which is the fact that it belongs to the whole community instead of a part of it. Therefore it can be made the center of the life of the whole neighborhood more easily than the church can, especially where denominational differences tend to divide the community. On the other hand,

¹ Incidentally it may be mentioned that many of the oldest recorded hymns of the Indo-European branch of the human race, those of the Rig-Veda, are agricultural hymns.

the fact that the school is a territorial institution — that is, that it belongs to all the people living within a certain territory — puts it at a disadvantage as compared with the church in a neighborhood where the majority of the voters are unprogressive and unenlightened. In such a neighborhood the school is likely to be of little use, except in so far as it is compelled by higher state authorities to fulfill its function properly. But if the church, being a voluntary institution, should happen to have in its membership the more enlightened and progressive part of the community, it may begin a work of social regeneration which would be impossible for the school. But, of course, if the church should be in the control of the least intelligent and least progressive part of the community, as is sometimes the case, it possesses all the disadvantages and none of the advantages of the school.

The country school is, of course, primarily an educational institution, and as such must give its attention mainly to instruction in certain conventional subjects which the world has come to regard as the necessary basis of an education, or as the essentials of a preparation for life. Remembering always that every kind of productive work is social service, we need have no difficulty in seeing that the first duty of the school is to fit its students for individual success in some line of production, and that the line for which the rural school is best fitted to prepare its pupils is agricultural production. But inasmuch as our present purpose is not to discuss the general problem of rural education, but only to consider how the rural school may be made a factor in developing a more wholesome and agreeable social life in the country, we need not consider the rural-school curriculum.

There is already an admirable interest in the school as a means of developing patriotism. The flag raisings, the celebration of national holidays, the reading of patriotic literature, the memorizing of national classics, all are excellent, and show how thoroughly awake our people are to some of the broader

aspects of the problem. Much remains yet to be done, however, in giving definiteness and concreteness to the patriotic sentiments which we are trying to develop. It is one thing to develop patriotism as an abstract virtue; it is quite a different thing to develop it as a passion for a definite, concrete, national achievement. At all times and in all lands the desire for victory in war has been the most powerful stimulus to patriotism. That gives the people something definite to strive for, — a concrete achievement around which patriotic sentiments may crystallize. That "peace hath her victories no less renowned than war," we doubtless believe in a general sort of way; but until our belief becomes particular, and we come to center our desires upon some definite productive achievement in the arts of peace, we shall never be able to arouse the patriotic passion as effectively in peace as in war. This ought to be especially clear to students who will have observed that school loyalty, merely as an abstract virtue, is difficult to develop without some definite achievement like an athletic contest or a debate, or even a spelling match, to be carried through. For our country schools, as well as for every other social agency in the country, one great problem, therefore, must be to particularize the patriotic sentiments of the community and give them a definite, productive aim.

People Generally Get What They Want Most

When a common or universal passion for productive achievement is once definitely aroused in a community, the achievement will follow as a matter of course. Any community can have as beautiful a countryside as it wants, provided it wants it seriously enough, and with sufficient unanimity, to spend the time and energy necessary to beautify it. Any community can have as moral a community or as prosperous a community as it wants, under the same conditions. Conversely, the lack of a common desire or a common social interest means failure in the arts of peace as surely as in those of war.

The desire to make the village the most beautiful village in the world, or to make one's township the most beautiful township, or to make it the greatest corn- or cotton- or wheat- or potato-growing township, or to make its schools the best in the world, or to produce the finest cattle or horses or hogs in the world, — any really useful purpose, in fact, if it will unite the people and call out a common and universal enthusiasm, — will do more to dignify the social life of the village or township than all the purposeless social entertainments that could be invented. A social life is not created by merely saying, Go to, now, let us be sociable. It is created by having a common purpose, worthy enough to commend itself to all right-minded people, and large enough to demand their attention, their time, and their hard work. The young men and women in particular, of our race, have never yet failed to respond to a call to hard work and self-sacrifice, when the work and the sacrifice were for an object of common good which they really thought worth achieving.

Next to a common interest and enthusiasm, the most important factors in the creation of a wholesome and agreeable social life in the country are opportunities for meeting and ease of communication. Aside from all the purely religious services rendered by the church, the mere fact that it brings people together in the room once a week is of immeasurable value. The most civilizing influence in the world is contact of man with man. Men cannot habitually meet together and look into one another's eyes without developing some kind of a sense of unity; nor can they live entirely separate and apart from one another without becoming suspicious, morose, and unsympathetic. The school, likewise, in addition to its purely educational functions, renders a service by the mere fact that it brings the juvenile population together day after day.

In addition to these regular occasions for meeting, there are the extraordinary occasions, such as national holidays and special rural festivities. Unfortunately we have, in this

country, failed to live up to our opportunities in the way of rural sports and festivities. In earlier days the corn huskings, barn raisings, quiltings, and a multitude of other occasions of the same general description supplied the need for wholesome recreation. Now we have outgrown the need for those precise forms of social gathering, and have not, as yet, developed anything satisfactory to take their place. We may say distinctly, therefore, that here is one of the unsolved problems of American rural life, though a partial solution has already been found in some sections of the country. In the old-fashioned Southern barbecue, which still survives in certain favored communities; in the Old Settlers' Day, which is celebrated in some communities of the central West; and in the Old Home Week of New England, we have examples of rural festivities which illustrate what may be done in any community where the whole countryside turns out for a holiday. Doubtless there are numerous other examples in other parts of the country. In some of the older countries the number and character of these festivals constitute an attractive feature of rural life.

The Tough Neighborhood

One difficulty with us is that we are not yet far enough removed from the backwoods stage to have entirely eliminated the rowdy element from our rural population. This element is frequently so much in evidence on these occasions, especially in backwoods neighborhoods, as to keep the more decent and self-respecting element away, thus destroying the value of the festival. A few generations of severe competition will doubtless give the advantage more and more to the sober, steady-going, self-respecting element, especially where the land is highly desirable. The restless, turbulent, rowdy element being crowded out, one of the greatest drawbacks to a wholesome social life in the country will have disappeared. This process is noticeably taking place in the best farming

regions, where there is something to attract a more progressive class of people. It has not yet shown itself so clearly in poorer regions, where there is little to attract a superior type of men and women.

In fact, it is an open question whether the poorest land is not destined to remain ultimately in the possession of a poorer type of man. A selective process seems to be going on, which tends to bring about such a result. Where the land is fertile and the opportunities for agricultural enterprise are good, the intelligent and progressive youths are induced to remain on the farm. They will be able to beat the less intelligent in competition and to buy the land away from them. At the same time, such lands attract the more intelligent and progressive farmers who are looking for a place in which to locate. An unintelligent and unprogressive farmer stands a poor show in such a place. The other class will offer so much for land that he will not be able to buy it. If he owns it already, they will offer him so much for it that he will generally yield to the pressure sooner or later, and sell out. On the other hand, where the land is poor and opportunities meager, the more capable of the growing youths tend to move away, so long at least as there are better opportunities to be found elsewhere. Again, the men who are crowded off the richer lands will sometimes drift toward those cheaper lands where they do not have to bid against competent, but only against incompetent, farmers. Eventually, however, it is possible that the competition even here may become so severe as to drive out the undesirable element.

The Standard of Living

The suggestion that the best lands tend to get into the hands of the best farmers needs qualification. It sometimes looks as though they tended to get into the hands of the farmers with the cheapest standard of living. It has often been noticed and remarked upon that foreign-born farmers are buying out

our native American farmers, not because the foreigners are better farmers, but because they can live more cheaply and thus accumulate capital for investment more rapidly. This, it is claimed, is merely a triumph of a lower over a higher standard of living, and indicates a tendency toward keeping farm life on a low level.

Against this pessimistic view there are two arguments. In the first place, during the entire latter third of the nineteenth century agriculture was relatively unprofitable in this country. This is the period when the displacement of American-born by foreign-born farmers was so noticeable. For an American of good education and business capacity, who was therefore fitted for business or professional life, there is no doubt that during that period the city offered better opportunities than the country, on the average. The foreigner, unless he were a man of unusual education and culture, had to take his choice between farming on the one hand, and some form of hand labor on the other. To him farming was frequently the only attractive opportunity. The reason the American farmer was willing to sell out at a price which the foreigner could pay was not altogether because the foreigner could make the farm pay better, but because the American had opportunities in the city which the foreigner did not have, not having yet become sufficiently adjusted to the conditions of American life. Now that agriculture is becoming more prosperous, so that the American-born farmer may have as good opportunities in the country as in the city, it remains to be seen whether he can be displaced by the foreigner, that is, whether he will generally be willing to sell out at a price which the foreigner can afford to pay, or whether he will not be willing and able to pay as much for land as the foreigner will. In the second place, a cheap standard of living is not necessarily an efficient one. A more expensive standard, provided it is rational, may be more efficient in competition than a cheaper one. An expensive standard of living, which includes forms

of expenditure that minister to mere pride and ostentation, or to unwholesome appetites, and does not add to one's intelligence or working capacity, will handicap one in competition with men whose standards of living do not include these irrational forms of expenditure. But an expensive standard of living, which includes only such forms of expenditure as maintain strength and working capacity, stimulate mental energy and alertness, and minister to the higher intellectual, social, and æsthetic desires, will never handicap any one in competition with men of lower standards. One result of a competition among standards of living will be, in the long run, to rationalize the standards, eliminating those forms of expenditure which add nothing, and preserving those which add something, to efficiency. This will come about through the greater success of those families whose standards of living approach most nearly to rationality, and through the lesser success of those families whose standards of living depart most widely from rationality. When farming becomes sufficiently profitable to furnish opportunities approximately as good as those furnished by the businesses and professions of the city, there is no reason why farmers with a high standard of living should be displaced by those with a low standard, provided the high standard is rational, and not one which ministers to enervating appetites or mere vanity and ostentation.

Rural Sports and Recreations

Every hard-working student will easily understand how essential a reasonable amount of recreation is to the maintenance of a high state of mental and physical efficiency. He will then appreciate the statement that a rational standard of living must include a reasonable expenditure of time or money on recreations: Just what is a reasonable expenditure for this purpose may not be easy to determine, though there need be no disagreement as to the general principle that too

little recreation, which produces dullness of body and mind, is as bad as too much, which is mere dissipation or waste of time, energy, and money. Nor need there be any disagreement as to the principle that the recreations should be such as to appeal to all members of the community. While economists generally approve a division of labor in industry, there are few who will approve a kind of division of labor which is too frequently found in rural communities, where most of the men work all the time and never play, while a few loafers amuse themselves all the time and never work.

Rural sports are the natural adjunct of rural festivals as a means of maintaining a wholesome and agreeable social life in the country. Owing to a natural excitability and tendency to excess, Americans have found it difficult to develop distinctive rural sports as a permanent and dignified institution of rural life, except in a few favored localities. Fox hunting and horse racing tend, in this country, to be spoiled as rural sports by their affectation by urban magnates in the one case and livery-stable toughs in the other. Nothing is finer and more dignified than for a group of neighboring, well-to-do farmers to unite for a day's hunting, when the purpose is to rid the country of vermin; but when a group of townsmen, who have learned to ride under a roof in a professional riding school, proceed to the country and advertise their solvency by chasing a timid fox across the fields, the sight is not calculated to inspire admiration. Nor is there any sport more fitting than for a group of horse-breeding farmers to meet for the purpose of testing the speed of their colts in a fair and open competition. It is only by such open competition that successful horse breeding is made possible. But when horse racing degenerates into a mere vaudeville "stunt," or, as is more frequently the case, into a mere opportunity for a group of professional gamblers from the purlieus of the livery stables, who have been initiated into the mysteries of race-track management, to enrich themselves at the expense of the unin-

tiated, it is not too much to say that it has lost its virtue as the inspirer of a wholesome and agreeable social life in the country.

In view of the well-known excitability of the American temperament, and its tendency to excess, it is important that rural sport in this country should be of a character which does not lend itself readily to extreme specialization; otherwise it will tend to drift into the hands of specialists, who do the playing while the public looks on. This produces a spectacle rather than a sport. It is also important that there should be considerable variety in the forms of sport, in order that as many as possible should be able to participate. Of particular importance, however, is the requirement that these sports should fit into the seasonal character of rural work. City work is so uniform that the time for recreation can be evenly distributed throughout the year. Short hours with regular weekly, biweekly, or monthly half holidays give the city worker ample time for wholesome recreation. But since in every farming country there are rush seasons, when short hours and half holidays would mean a loss of crops, it is obvious that recreation time cannot be so evenly diffused. To make up for this, it is desirable that during the seasons when work is slack there should be regular periods of recreation, and games which need not be crowded into a single afternoon.

This suggests the need also of regular annual festival occasions, suited to each section of the country and its type of agriculture, when there can be a general relaxation from the strenuous toil of the rush seasons. In anticipation of such a period of jollity, the grinding fatigue of the busy season is borne with more patience, particularly by the young people, and the work is done more vigorously because more cheerfully. Again, there is the possibility of uniting social pleasure with rural work to a somewhat greater degree than is now done. If the spirit which showed itself among our ancestors in the barn raisings, logrollings, and similar occasions could be re-

stored, it is possible that the present generation could get a great deal of social pleasure out of the threshing season and other occasions of a similar character. This would seem to be the natural time for the harvest home celebration, which has been so important an event in all old rural civilizations. In former days, however, as the writer can testify, threshing was such prodigiously hard work, and a great deal of it was so dusty and disagreeable, as to stifle any spirit of jollification which might otherwise have arisen. But with the more powerful engines and more highly improved machinery of the present, the hardest and most disagreeable part of the work of threshing has been eliminated. Under such conditions it is at least a theoretical possibility that the threshing season in any neighborhood might be made a festival occasion, to be participated in by women as well as by men — by priest, parson, and school-ma'am as well as by the farmers themselves. This, however, is only by way of suggestion.

The Grange

Of all the organizations which are now contributing on a large scale to the social life of rural America, the grange is, at the present time, one of the most effective, partly, perhaps, because it is organized for the purpose. It is, however, somewhat exclusive, in that it serves the social needs of its own membership rather than those of the whole community. Even more exclusive in character are the lodges of the various secret and fraternal orders, which also serve the social needs of their own members. This brings us face to face with one of the most difficult problems in the whole field of rural social economy, — Is it possible to maintain a social life except through some agency of selection and exclusion? In aristocratic countries, where class distinctions are of ancient and historic standing, the social life runs pretty definitely within class lines, but within those boundaries it runs freely. In democratic America, where caste and hereditary class distinctions

are not allowed, we have not yet become adjusted to the new situation, especially in the rural districts; and there is a strong tendency toward the formation of groups on the basis of likes and dislikes, and for the social life to run within these groups. This is clearly a long step in advance of the caste system, or of the stratification of society according to aristocratic principles, in that the grouping is based upon something besides the accident of birth; but it falls short of a thoroughly democratic ideal, according to which social life ought to run freely without regard to the boundaries of class, creed, or fraternal order. This ideal, however, has not yet been realized, for those countries and communities where hereditary aristocracy is least in evidence are the places where secret societies and fraternal orders are most highly developed and most influential. Doubtless they furnish a protection against the disagreeable obtrusiveness of the mob element in our aggressive democracy; but there is danger that their very exclusiveness should breed a spirit of snobbishness.

Shall Rural People Set Their Own Standards, or Shall They Imitate City People?

But all the organizations and agencies which contribute to the social life of rural communities will fall short of their highest possibilities unless they make rural life socially self-supporting, and independent of the standards and fashions of the city; unless, in short, they give to the social life of the country a character and dignity of its own, instead of being a bad copy of city life. So long as country life lacks this distinctive character and dignity, so long as country people look to the cities for their standards of dress, their social habits, and their ideals of propriety, so long will rural social life remain unsatisfactory. The domination of the city over the country is, in last analysis, a mental or spiritual domination. It will end when country people are able to set their own standards, when they stop trying to be city people, or

to be like city people. When they develop a reasonable pride in the fact that they are country people, and in their country dress, country habits, country customs; and when this pride is justified by the inherent sanity and simple, unostentatious dignity of their lives, — then we shall have a rural civilization worthy of the name. Unless this result is achieved, many of the so-called rural improvements will merely serve to link the country to the city and still further increase the domination of the latter over the former. If rural free delivery does no more than to bring to the farmer the daily paper from the city, with its garish advertisements and its neurotic sensationalism, and if this should develop among country people a desire for those forms of excitement which city people seem to like and to be willing to pay for, the result will be not to diminish but to increase the lure of the city. When the quiet and serenity of country life are referred to in such terms as lonesomeness and monotony, and the rural free delivery is regarded merely as a means of relieving that lonesomeness and monotony, the symptoms are not favorable for the development of a wholesome rural life. But if rural free delivery, like the rural telephone, is a means of linking one country neighborhood with another, of exchanging ideas among country people as well as between city and country, if it results in the development of an *esprit de corps* among country people, and enables them to develop a social life of their own, all these things will help in the building of a worthy rural civilization, and in making country life satisfying and agreeable.

This is a factor of great financial as well as social importance. When the city contains everything which country people really want, then the city will be the place where country people will go to spend their money. If a farmer becomes prosperous enough to retire from work, he will go to town to live; he will buy a lot and build a house in the town and spend his time and his money there. But if the country contains the things which country people want, then the country is

the place where they will go to spend their money. If the farmers who wish to retire from active work would spend in the country, on their own farms, for example, the money which would be necessary to buy and maintain residences in the towns and cities, it would not take very long to make the country a most attractive place of residence. Schools, churches, library facilities, plumbing, and steam heat can all be had in the country as well as in the city. But if people cultivate a liking for the noises, the electric displays, the large billboards, and other similar delectations of the cities, the country can furnish few attractions of this kind to compete with the city. Country people will continue to move cityward, seeking a chance to spend their money for the things of their choice.

It may be supposed that if the country should furnish the things which city people really want and are willing to pay for, it would contribute to the financial prosperity of the country; but this conclusion must not be too hastily reached. It must not be imagined that a mere willingness on the part of certain townspeople to spend a part of their time and money in the country is in itself a mark of genuine appreciation of country life, or that it tends to make real farmers, who have to make their living at farming, more appreciative of rural enjoyments. It is one thing to go to the country once in a while to disburden one's self of an accumulation of surplus cash, and then return to the city to talk about it; it is quite another thing to appreciate the quiet and homely enjoyments which lie within the reach of the plain farmer, — enjoyments which do not require even an automobile as an accessory. Against the idea that the rural-life problem is to be solved by a few wealthy capitalists building themselves palatial residences in the country and spending a part of their surplus time there, Sir Horace Plunkett uses the following weighty words:

I am not, so they tell me, up to date in my information; there is a marked reversion of feeling upon the town *versus* the country question; the tide of the rural exodus has really turned, as I might have observed without going far afield. At many a Long Island home I might see on Sunday, weather permitting, the horny-handed son of week-day toil in Wall Street, rustically attired, inspecting his Jersey cows and aristocratic fowls. These supply a select circle in New York with butter and eggs, at a price which leaves nothing to be desired, — unless it be some information as to cost of production. Full justice is done to the new country life when the Farmers' Club of New York fulfills its chief function, — the annual dinner at Delmonico's. Then agriculture is extolled in fine Virgilian style, the Hudson villa and the Newport cottage being permitted to divide the honors of the rural revival with the Long Island home. But to my bucolic intelligence it would seem that against the "back-to-the-land" movement of Saturday afternoon the captious critic might set the rural exodus of Monday morning.¹

A few magnificent villas, where wealthy townsmen spend the money which they acquire in town, will not help to solve the problem of country life for those who have to make their living from the soil, except where wealth is combined with taste, tact, and sympathy. If these qualities are absent, the display of urban magnificence in the country tends rather to increase the discontent of the young men and women of the neighborhood. It helps to create the impression that the only satisfactory way to live in the country is to go to town and make a fortune, and then come back to the country to spend it. There were many magnificent villas owned by Roman magnates in Italy, even in the very worst period of rural decline under the Roman Empire. The dominance of the city was so complete that the country was never looked upon as a place in which to live unless one had a fortune to spend there. Aside from its function of furnishing pleasing sites for villas, the country was regarded merely as a place where the city could get supplies of food. People really *lived* in town. In fact, this dominance of the town over the country was one of the characteristics of ancient civilization, though

¹ *The Rural Life Problem in the United States* (New York, 1910), p. 152.

that dominance was more complete at certain times than at others.

On this point the following passages are significant:

Rome was, in its origin, only a municipality, a corporation. The government of Rome was merely the aggregate of the institutions which were suited to a population confined within the walls of a city; these were municipal institutions, — that is their distinguishing character. This was not the case with Rome only. If we turn our attention to Italy at this period, we find around Rome nothing but towns. That which was then called a people was simply a confederation of towns. The Latin people was a confederation of towns. The Etruscans, the Samnites, the Sabines, the people of Græcia Magna, may all be described in the same terms.

There was at this time no country, — that is to say, the country was wholly unlike that which at present exists; it was cultivated, as was necessary, but it was uninhabited. The proprietors of lands were the inhabitants of the towns. They went forth to superintend their country properties, and often took with them a certain number of slaves; but that which we at present call the country, that thin population — sometimes in isolated habitations, sometimes in villages — which everywhere covers the soil, was a fact almost unknown in ancient Italy.

When Rome extended herself, what did she do? Follow history, and you will see that she conquered or founded towns; it was against towns that she fought, with towns that she contracted alliances; it was also into towns that she sent colonies. The history of the conquest of the world by Rome is the history of the conquest and foundation of a great number of towns. . . .

In Gaul, in Spain, you meet with nothing but towns. At a distance from the towns the territory is covered with marshes and forests. Examine the character of the Roman monuments, of the Roman roads. You have great roads, which reach from one city to another; the multiplicity of the minor roads, which now cross the country in all directions, was then unknown; you have nothing resembling that countless number of villages, country seats, and churches, which have been scattered over the country since the Middle Ages. Rome has left us nothing but immense monuments, stamped with the municipal character, and destined for a numerous population collected upon one spot. Under whatever point of view you consider the Roman world, you will find this almost exclusive preponderance of towns and the social nonexistence of the country.¹

¹ Guizot, F., *The History of Civilization* (London, 1856), Vol. I, pp 27-29.

The establishment of the feudal system produced one of these modifications, of unmistakable importance; it altered the distribution of the population over the face of the land. Hitherto the masters of the soil, the sovereign population, had lived united in more or less numerous masses of men, whether sedentarily in cities, or wandering in bands through the country. In consequence of the feudal system these same men lived isolated, each in his own habitation, and at great distances from one another. You will immediately perceive how much influence this change was calculated to exercise upon the character and course of civilization. The social preponderance, the government of society, passed suddenly from the towns to the country; private property became of more importance than public property; private life than public life. Such was the first and purely material effect of the triumph of feudal society. The further we examine into it, the more will the consequence of this single fact be unfolded to our eyes.¹

Elsewhere Guizot points out the well-known fact that the rise of modern civilization is again reversing the order and tending to concentrate population, wealth, and power in the cities, and to emphasize urban rather than rural ideals.

Farming vs. Talking as a Field for Ambition

One striking evidence of the general dominance of urban over rural ideals in America is the almost total indifference of our people to agriculture as a field of distinguished achievement. Great efficiency in the practical application of science to agriculture, or in the organization of the factors of agricultural production, are recognized in the abstract by every thoughtful person as of the highest possible value to the country as a whole; but in the concrete we pay very little attention to it. The ancient remark about the value of the man who makes two blades of grass to grow where one had grown before, as compared with the politician (or the talker), we approve in a general way, but specifically we think a great deal more of the talker. The man who applies great executive ability and scientific knowledge to agriculture may get good crops

¹ Guizot, F., *The History of Civilization* (London, 1856), Vol. I, p. 68.

and make profit for himself; he may also win local recognition, particularly among farmers; but unless he talks or writes about it, he does not gain general recognition among the people at large. In proof of this, let any one look through *Who's Who in America*, which is supposed to contain the names of those who have achieved marked success in every large field of human endeavor. Judging by its pages, either agriculture is not a large field of human endeavor, or else there are no markedly successful farmers. Choosing those states in which agriculture is commonly supposed to be a large field of endeavor, we find in the edition of 1908-1909 almost no farmers. The number of distinguished persons connected with agriculture and allied fields of work is as follows:

Maine, 1 farmer-manufacturer, 1 horticulturist (at the State University)
Ohio, 1 agricultural educator, 1 agriculturist
Indiana, 1 arboriculturist
Illinois, 1 farmer
Iowa, 1 forester, 1 horticulturist (both in the State College at Ames),
1 breeder, 1 farmer
Kansas, 1 stockman, 1 fruit grower
Nebraska, 1 agricultural educator, 1 forester, 1 farmer

This lack of recognition of the farmer is not, of course, the fault of the editors of *Who's Who*. They include in their publication only the names which are widely known or talked about. The fact that an eminently successful farmer is not widely known or talked about is due to the fact that our people have no interest in that kind of achievement.

Another proof of the same thing is the fact that almost no farmer has secured, in recent years, any political recognition. Even Mr. Roosevelt, with all his enthusiasm for rural uplift, consistently preferred the man who talked about farming to the man who did the work of farming. His Rural Life Commission, for example, was an excellent commission, but it was not made up of farmers, but of eminent men who had talked a great deal and very wisely about agriculture and the prob-

lems connected with it. This helps to explain why farmers were generally so skeptical as to the results of the commission's work.

So long as men are so constituted as to crave distinction and wide public esteem, so long will they tend to avoid an occupation which seems to furnish no opportunities in that direction. Until our esteem for the farmer ceases to be merely an approval of farming in the abstract, and begins to show itself in the form of an appreciation of the individual farmer and his particular achievement, we shall not accomplish very much in the way of checking the movement of the more ambitious youths toward the city.

Absentee Landlordism

Next to war, pestilence, and famine, the worst thing that can happen to a rural community is absentee landlordism. In the first place, the rent is all collected and sent out of the neighborhood to be spent somewhere else; but that is the least of the evils. In the second place, there is no one in the neighborhood who has any permanent interest in it except as a source of income. The tenants do not feel like spending any time or money in beautification, or in improving the moral or social surroundings. Their one interest is to get as large an income from the land as they can in the immediate present. Because they do not live there, the landlords care nothing for the community, except as a source of rent, and they will not spend anything in local improvements unless they see that it will increase rent. Therefore such a community looks bad, and possesses the legal minimum in the way of schools, churches, and other agencies for social improvement. In the third place, and worst of all, the landlords and tenants live so far apart and see one another so infrequently as to furnish very little opportunity for mutual acquaintance and understanding. Therefore class antagonism arises, and bitterness of feeling shows itself in a variety of ways. Where

the whole neighborhood is made up of a tenant class which feels hostile toward the absent-landlord class, evasions of all kinds are resorted to in order to beat the hated landlords. On the other hand, the landlords are goaded to retaliation, and the rack-rent system prevails. Sometimes the community feeling among tenants becomes so strong as to develop a kind of artificial "tenant right," which is in opposition to the laws of the land, and the laws of the land are then made more severe in order to control the "tenant right."¹

Even where the class antagonism is not carried to this extreme, there is a wasteful expenditure of human energy in the efforts of one class to circumvent the other, and the attractiveness and dignity of rural life are destroyed by the jealousy and rancor thus created.

In this country we are accustomed to look with disfavor upon any system of tenancy; but whatever may be said of tenancy as such, there is not the slightest doubt that the worst possible system is that under which the landowner lives at a distance and maintains no connection with the land except as a receiver of rent. Where the landlord lives upon his own estate and takes an interest in it, the worst features of tenancy disappear. The landowner's interest in his own home creates, in him an attitude toward the rural neighborhood which is quite different from that of the absentee.

The Resident Landlord as Leader

Besides, there are some advantages in a system which gives the large landowner a chance to devote his time to broad

¹ In some parts of France, under the old régime, the tenants would combine to fix rents and to prevent newcomers from renting land. The tenant would even sell his "right," or bequeath it to his son, very much as though he owned the land. Any one else who would lease the land so bequeathed, or interfere with the son's possession, would be liable to injury or murder. The laws of the country were ineffective against this determined stand of the tenants.

schemes of improvement while his tenants are completely occupied with the immediate problem of growing crops. This is the one serious disadvantage of the American type of agriculture under which the land is owned by small- or medium-scale farmers who do their own work. No one has the time or the surplus capital to carry on elaborate experimenting, extensive drainage operations, or similar large-scale improvements. Under the English system the large landed proprietors have led in most of these progressive movements, without waiting for a general public awakening. In the United States, and other countries of small proprietors, these enterprises have been carried on either by the state or by coöperative enterprises. These methods are excellent in themselves, but they are necessarily slower than the English method, for the simple and sufficient reason that the general public is always slower than a few of its most intelligent individuals. At the present time, in the United States, the federal Department of Agriculture, the state agricultural colleges, and the experiment stations are carrying on this kind of work on a more elaborate scale than is possible for a group of individual proprietors, however large their estates, though much pioneer work was done on great English estates.

Another advantage of the tenancy system, as it exists in England, is that it furnishes a kind of organization of agricultural interests, — or at least a very good substitute for organization. A great landowner living on his estate, and interested in its prosperity, is a natural leader and organizer of the rural community consisting of his tenants. It is everywhere recognized in the United States that the great difficulty in the way of organization of rural communities is the lack of leaders. If this difficulty is still further accentuated by a feeling of jealousy, as is too frequently the case, among the farmers of a neighborhood, the problem of organization is well-nigh insoluble. Unless the country church can remove this feeling of jealousy and suspicion by the effective preach-

ing of a gospel of brotherhood, it is difficult to see what can be done for such a neighborhood. With the well-known efficiency of our agricultural colleges and experiment stations, and of our national Department of Agriculture, we have done a great deal to remove the one disadvantage of the system of detached, one-family farming. If we can, in addition, bring about an effective organization of our rural interests, we shall have all the advantages and none of the disadvantages of the system of tenancy under large proprietors.

*Organization for a Purpose, or Organization for its
Own Sake*

It is extremely unlikely that any effective or permanent organization of rural interests can ever be brought about without some pretty definite object to be accomplished. Organization for organization's sake is a poor program. Again, it is extremely unlikely that any single object, or group of objects, can be made the basis of a national organization. Our agricultural interests are too diverse for that. All attempts to form a general homogeneous organization of the farmers of the country will probably fail, as they have hitherto. This points unmistakably to the organization of local interests for definite purposes. When several farmers in a certain locality have a clear and definite purpose to accomplish, they have no difficulty in organizing for that purpose. One of the best examples of this is the California Fruit Growers Exchange. A large number of fruit growers, seeing that they must organize their marketing arrangements or become bankrupt, had a sufficient motive. The question of leadership solves itself under such conditions. The man who knows how to do what everybody wants done is a leader by the only kind of divine right, — namely, natural fitness. An illustration of the same principle on a smaller scale is furnished by the farmers of a certain New Hampshire township, who needed a market.

They organized and opened a store in Cambridge, Massachusetts, to which they sent their produce. In this case the leader was a country pastor. A multitude of other examples, large and small, could be named, all illustrating the same principle, namely, that the organization must be local to begin with, and that it must have a clear and definite object to accomplish.

The organization of rural interests need not, however, remain local and scattered. They may be federated. Those who are interested in rural organization may well take lessons from the organizers of the labor movement. The attempt to form a general, homogeneous organization of all laboring men had a promising beginning in the Knights of Labor, but it lacked the element of definiteness and of local unity. Its influence, therefore, waned rapidly, whereas the American Federation of Labor rose to great prominence, power, and influence. Organizing local unions among members of each separate trade, and then federating these unions, leaving to each a great deal of independence and local autonomy, this movement has proceeded on sound principles of organization. This points to the principle of federation as the correct one upon which to attempt the general organization of rural interests. A beginning is already made in the various local and special organizations scattered over the country. If these can be federated into state and national organizations, leaving each local body independent and autonomous, at least so far as its own special objects are concerned, a movement may be started which will do for farmers what the American Federation of Labor has done for wageworkers, though the active program need not be the same.

It cannot be too much emphasized, however, that any organization whose objects are not constructive, and designed to promote the welfare of the country as a whole, is foredoomed to ultimate failure, because it ought to fail. It is for the interest of the country as a whole that the supply of fruit

should be adjusted to the demand, and that there should not be a glut in one market while there is a scarcity in another. A fruit-growers' exchange, by organizing the shipping and selling of its fruit so as to bring about a more uniform and equal adjustment of the supply to the demand, is performing a productive function for the country as a whole, and deserves success. When it begins to abuse its power and, instead of adjusting the supply to the demand, undertakes merely to charge monopoly prices, it will deserve to fail, and will eventually fail. The same may be said of an organization of dairymen, market gardeners, cotton growers, etc. However, it is not necessary that such organizations should be philanthropic. On the contrary, it is probably better that they should be strictly self-interested; but it is essential that self-interest should be followed in economic rather than in uneconomic ways, as these terms were defined in Chapter I. To attempt to promote one's self-interest in a way which contributes to the productivity of the whole country is to deserve success; to attempt to promote it in any other way is to deserve failure. That is why coöperative enterprises, when actuated by mere jealousy of some storekeeper, or of any one else who is doing useful and honest work, usually fail. But coöperative enterprises which attempt something constructive, like the starting of a new industry, the opening of a new market, or the prevention of real waste, and are therefore actuated by a higher motive than hate or jealousy, are usually successful, and redound to the interest and profit of the participants.

This part of our discussion may be summed up by saying that until our rural interests become organized our rural life will continue to be dominated by urban interests, urban standards, urban ideals, and that this will leave rural life in a weak and undignified position. Furthermore, it will not be easy to organize rural interests in any single homogeneous organization, because our agricultural interests are too diverse

and heterogeneous; but the organization must proceed through the formation of local associations having definite, tangible, and constructive aims, and the gradual federation of these local organizations into a general organization combining unity and solidarity with diversity and local autonomy.

THE WAY TO BETTER FARMING AND BETTER LIVING¹

SIR HORACE PLUNKETT

IN no way is the contrast between rural and urban civilization more marked than in the application of the teachings of modern science to their respective industries. Even the most important mechanical inventions were rather forced upon the farmer by the efficient selling organization of the city manufacturers than demanded by him as a result of good instruction in farming. On the mammoth wheat farms, where, as the fable ran, the plough that started out one morning returned on the adjoining furrow the following day, mechanical science was indeed called in, but only to perpetrate the greatest soil robbery in agricultural history. Application of science to legitimate agriculture is comparatively new. In my ranching and farming days I well remember how general was the disbelief in its practical value throughout the Middle and Far West. In cowboy terminology, all scientists were classified as "bug-hunters," and farmers generally had no use for the theorist. The non-agricultural community had naturally no higher appreciation of the farmer's calling than he himself displayed. When some Universities first developed agricultural courses, the students who entered for them were nicknamed "aggies," and were not regarded as adding much to the dignity of a seat of higher learning. The Department of Agriculture was looked upon as a source of jobs, graft being the nearest approach to any known agricultural operation.

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All this is changing fast. The Federal Department of Agriculture is now perhaps the most popular and respected of the world's great administrative institutions. In the Middle West, a newly awakened public opinion has set up an honourable rivalry between such States as Wisconsin, Iowa, Illinois, Nebraska and Minnesota, in developing the agricultural sides of their Universities and Colleges. None the less, Mr. James J. Hill has recently given it as his opinion that not more than one per cent of the farmers of these regions are working in direct touch with any educational institution. It is probable that this estimate leaves out of account the indirect influence of the vast amount of extension work and itinerant instruction which is embraced in the activities of the Universities and Colleges. I fear it cannot be denied that in the application of the natural sciences to the practical, and of economic science to the business of farming, the country folk are decades behind their urban fellow-citizens. And again I say the disparity is to be attributed to the difference in their respective degrees of organization for business purposes.

The relation between business organization and economic progress ought, I submit, to be very seriously considered by the social workers who perceive that progress is mainly a question of education. Speaking from administrative experience at home, and from a good deal of interested observation in America, I am firmly convinced that the new rural education is badly handicapped by the lack of organized bodies of farmers to act as channels for the new knowledge now made available. In some instances, I am aware, great good has been done by the formation of farmers' institutes which have been established in order to interest rural communities in educational work and to make the local arrangements for instruction by lectures, demonstrations, and otherwise. But all European experience proves the superiority for this purpose of the business association (which, by the way, has a much better permanence) to the organization *ad hoc*.

Again, the influence upon rural life of the agricultural teaching of the Colleges and Universities, as exercised to their pupils, may be too easily accepted as being of greater potential utility than any work which these institutions can do amongst adults. This is a mistake. The thousands of young men who are now being trained for advanced farming too often have to restrict the practical application of their theoretic knowledge to the home circle, which is not always responsive, for a man is not usually a prophet in his own family. It is here that the educational value of coöperative societies comes in; they act as agencies through which scientific teaching may become actual practice, not in the uncertain future, but in the living present. A coöperative association has a quality which should commend it to the social reformer — the power of evoking character; it brings to the front a new type of local leader, not the best talker, but the man whose knowledge enables him to make some solid contribution to the welfare of the community.

I come now to the last part of the threefold scheme — that which aims at a better life upon the farm. The coöperative association, in virtue of its non-capitalistic basis of constitution and procedure (which, as I have explained, distinguishes it from the joint stock company), demands as a condition of its business success the exercise of certain social qualities of inestimable value to the community life. It is for this reason, no doubt, that where men and women have learned to work together under this system in the business of their lives, they are easily induced to use their organization for social and intellectual purposes also.

The new organization of the rural community for social as well as economic purposes, which would follow from the acceptance of the opinion I have advanced, would bring with it the first effective counter-attraction to the towns. Their material advantages the country cannot hope to rival; nor can any conceivable evolution of rural life furnish a real

counterpart to the cheap and garish entertainments of the modern city. Take, for example, the extravagant use of electric light for purposes of advertisement, which affords a nightly display of fireworks in any active business street of an American city far superior to the occasional exhibition at the Crystal Palace in London, which was the rare treat of my childhood days. These delights—if such they be—cannot be extended into remote villages in Kansas or Nebraska; but their enchantment must be reckoned with by those who would remold the life of the open country and make it morally and mentally satisfying to those who are born to it, or who, but for its social stagnation, would prefer a rural to an urban existence.

In one of his many public references to country life, President Roosevelt attributed the rural exodus to the desire of “the more active and restless young man and woman” to escape from “loneliness and lack of mental companionship.” He is hopeful that the rural free delivery, the telephone, the bicycle and the trolley will do much towards “lessening the isolation of farm life and making it brighter and more attractive.” Many to whom I have spoken on this subject fear that the linking of the country with the town by these applications of modern science may, to some extent, operate in a direction the opposite of that which Mr. Roosevelt anticipates and desires. According to this view, the more intimate knowledge of the modern city may increase the desire to be in personal touch with it; the telephone may fail to give through the ear the satisfaction which is demanded by the eye; among the “more active and restless young men and women” the rural free delivery may circulate the dime novel and the trolley make accessible the dime museum. In the total result the occasional visit may become more and more frequent, until the duties of country life are first neglected and then abandoned.

I do not feel competent to decide between these two views, but I offer one consideration with which I think many rural

reformers will agree. The attempt to bring the advantages of the city within the reach of the dwellers in the country cannot, of itself, counteract the townward tendency in so far as it is due to the causes summarized above. However rapidly, in this respect, the country may be improved, the city is sure to advance more rapidly and the gap between them to be widened. The new rural civilization should aim at trying to develop in the country the things of the country, the very existence of which seems to have been forgotten. But, after all, it is the world within us rather than the world without us that matters in the making of society, and I must give to the social influence of the coöperative idea what I believe to be its real importance.

In Ireland, from which so much of my experience is drawn, we have found a tendency growing among farmers whose combinations are successful, to gather into one strong local association all those varied objects and activities which I have described as advocated by the Irish Agricultural Organization Society. These local associations are ceasing to have one special purpose or one object only. They absorb more and more of the business of the district. One large, well-organized institution is being substituted for the numerous petty transactions of farmers with middlemen and small country traders. Gradually the Society becomes the most important institution in the district, the most important in a social as well as in an economic sense. The members feel a pride in its material expansion. They accumulate large profits, which in time become a kind of communal fund. In some cases this is used for the erection of village halls where social entertainments, concerts and dances are held, lectures delivered and libraries stored. Finally, the association assumes the character of a rural commune, where, instead of the old basis of the commune, the joint ownership of land, a new basis for union is found in the voluntary communism of effort.

A true social organism is thus being created with common human and economic interests, and the clan feeling, which was so powerful an influence in early and medieval civilizations, with all its power of generating passionate loyalties, is born anew in the modern world. Our ancient Irish records show little clans with a common ownership of land hardly larger than a parish, but with all the patriotic feeling of large nations held with an intensity rare in our modern states. The history of these clans and of very small nations like the ancient Greek states shows that the social feeling assumes its most binding and powerful character where the community is large enough to allow free play to the various interests of human life, but is not so large that it becomes an abstraction to the imagination. Most of us feel no greater thrill in being one of a State with fifty million inhabitants than we do in recognizing we are citizens of the solar system. The rural commune and the very small States exhibit the feeling of human solidarity in its most intense manifestations, working on itself, regenerating itself and seeking its own perfection. Combinations of agriculturists, when the rural organization is complete, re-create in a new way the conditions where these social instincts germinate best, and it is only by this complete organization of rural life that we can hope to build up a rural civilization, and create those counter-attractions to urban life which will stay the exodus from the land.

I do not wish to exaggerate even the interest which the rural life of my own little island may have for those who are concerned for the vast and wealthy expanses of the American farm lands. But, even in the United States, I have seen the really simple life, which in its commonest manifestation is a thing that rather simple people talk about. In a properly organized rural neighborhood could be developed that higher kind of attraction which is suggested by the very word *neighbourhood*. Once get the farmers and their families all working together at something that concerns them all, and we have

the beginning of a more stable and a more social community than is likely to exist amid the constant change and bustle of the large towns, where indeed some thinkers tell us that not only the family, but also the social life, is badly breaking down. When people are really interested in each other — and this interest comes of habitually working together — the smallest personal traits or events affecting one are of interest to all. The simplest piece of amateur acting or singing, done in the village hall by one of the villagers, will arouse more criticism and more enthusiasm among his friends and neighbours than can be excited by the most consummate performance of a professional in a great city theatre, where no one in the audience knows or cares for the performer.

But if this attraction — the attraction of common work and social intercourse with a circle of friends — is to prevail in the long run over the lure which the city offers to eye and ear and pocket, there must be a change in rural education. At present country children are educated as if for the purpose of driving them into the towns. To the pleasure which the cultured city man feels in the country — because he has been taught to feel it — the country child is insensible. The country offers continual interest to the mind which has been trained to be thoughtful and observant; the town offers continual distraction to the vacant eye and brain. Yet, the education given to country children has been invented for them in the town, and it not only bears no relation to the life they are to lead, but actually attracts them towards a town career. I am aware that I am here on ground where angels — even if specialized in pedagogy — may well fear to tread. Upon the principles of a sound agricultural education pedagogues are in a normally violent state of disagreement with each other. But whatever compromise between general education and technical instruction be adopted, the resulting reform that is needed has two sides. We want two changes in the rural mind — not omitting the rural teacher's

mind. First, the interest which the physical environment of the farmer provides to followers of almost every branch of science must be communicated to the agricultural classes according to their capacities. Second, that intimacy with and affection for nature, to which Wordsworth has given the highest expression, must in some way be engendered in the rural mind. In this way alone will the countryman come to realize the beauty of the life around him, as through the teaching of silence he will learn to realize its truth.

Upon this reformed education, as a basis, the rural economy must be built. It must, if my view be accepted, ensure, first and foremost, the combination of farmers for business purposes in such a manner as will enable them to control their own marketing and make use of the many advantages which a command of capital gives. In all European countries — with the exception of the British Isles — statesmen have recognized the national necessity for the good business organization of the farmer. In some cases, for example France, even Government officials expound the coöperative principle. In Denmark, the most predominantly rural country in Europe, the education both in the common and in the high school has long been so admirably related to the working lives of the agricultural classes that the people adopt spontaneously the methods of organization which the commercial instinct they have acquired through education tells them to be suitable to the conditions. The rural reformer knows that this is the better way; but our problem is not merely the education of a rising, but the development of a grown-up generation. We cannot wait for the slow process of education to produce its effect upon the mind of the rural youth, even if there were any way of ensuring their proper training for a progressive rural life without first giving to their parents such education as they can assimilate. Direct action is called for; we have to work with adult farmers and induce them to reorganize their business upon the lines which I have attempted to define.

Moreover, this is essential to the future success of the work done in the schools, in order that the trained mind of youth may not afterwards find itself balked by the ignorant apathy or lazy conservatism of its elders.

I hold, then, that the new economy will mean a more scientific mastery of the technical side of farming, when farmers will make a much larger use of the advice, instruction and help which the Nation and the States offer them through the Department of Agriculture and the Colleges. It is equally certain that there will arise a more human social life in the rural districts, based upon the greater share of the products of the farmer's industry, which the new business organization will enable him to retain; stimulated by the closer business relations with his fellows which that organization will bring about, and fostered by the closer neighbourhood which is implied in a more extensive cultivation.

The development of a more intensive cultivation must carry with it a much more careful consideration of the labour problem. The difficulty of getting and keeping labour on the farm is a commonplace. I think farmers have not faced the fact that this difficulty is due in the main to their own way of doing their business. Competent men will not stay at farm labour unless it offers them continuous employment as part of a well-ordered business concern; and this is not possible unless with a greatly improved husbandry.

To-day agriculture has to compete in the labour market against other, and to many men more attractive, industries, and a marked elevation in the whole standard of life in the rural world is the best insurance of a better supply of good farm labour. Only an intensive system of farming can afford any large amount of permanent employment at decent wages to the rural labourer, and only a good supply of competent labour can render intensive farming on any large scale practicable. But the intensive system of farming not only gives regular employment and good wages; it also fits the labourer

of to-day — in a country where a man can strike out for himself — to be the successful farmer of to-morrow. Nor, in these days of impersonal industrial relations, should the fact be overlooked that under an intensive system of agriculture, we find still preserved the kindly personal relation between employer and employed which contributes both to the pleasantness of life and to economic progress and security.

Moreover, in a country where advanced farming is the rule, there is a remarkable, and, from the standpoint of national stability, most valuable, steadiness in employment. Good farming, by fixing the labourer on the soil, improves the general condition of rural life, by ridding the countryside of most of its present pests. Those wandering dervishes of the industrial world, the hobo, the tramp — the entire family of Weary Willies and Tired Timothys — will no longer have even an imaginary excuse for their troubled and troublesome existence. But the farmer who was the prey of these pests must, if he would be permanently rid of them, learn to respect his hired farm hand. He must provide him with a comfortable and a modest garden plot upon which his young family may employ themselves; otherwise, whatever the farmer may do to attract labour, he will never retain it. In short, the labourer, too, must get his full and fair share of the prosperity of the coming good time in the country.

There is one particular aspect of this improved social life which is so important that it ought properly to form the subject of a separate essay; I mean the position of women in rural life. In no country in the world is the general position of woman better, or her influence greater, than in the United States. But while woman has played a great part there in the social life and economic development of the town, I hold that the part she is destined to play in the future making of the country will be even greater.

In the more intelligent scheme of the new country life, the economic position of woman is likely to be one of high

importance. She enters largely into all three parts of our programme, — better farming, better business, better living. In the development of higher farming, for instance, she is better fitted than the more muscular but less patient animal, man, to carry on with care that work of milk records, egg records, etc., which underlies the selection on scientific lines of the more productive strains of cattle and poultry. And this kind of work is wanted in the study not only of animal, but also of plant life.

Again, in the sphere of better business, the housekeeping faculty of woman is an important asset, since a good system of farm accounts is one of the most valuable aids to successful farming. But it is, of course, in the third part of the programme— better living, — that woman's greatest opportunity lies. The woman makes the home life of the Nation. But she desires also social life, and where she has the chance she develops it. Here it is that the establishment of the coöperative society, or union, gives an opening and a range of conditions in which the social usefulness of woman makes itself quickly felt. I do not think that I am laying too much stress on this matter, because the pleasures, the interests and the duties of society, properly so called, — that is, the state of living on friendly terms with our neighbours, — are always more central and important in the life of a woman than of a man. The man needs them, too, for without them he becomes a mere machine for making money, but the woman, deprived of them, tends to become a mere drudge. The new rural society economy (which implies a denser population occupying smaller holdings) must therefore include a generous provision for all those forms of social intercourse which specially appeal to women. The Women's Sections of the Granges have done a great deal of useful work in this direction; we need a more general and complete application of the principles on which they act.

I have now stated the broad principles which must govern any effective scheme for correcting the present harmful sub-

ordination of rural life to a civilization too exclusively urban. Before I bring forward my definite proposal for a remedy calculated to meet the needs of the situation, I must anticipate a line of criticism which may occur to the mind of any social worker who does not happen to be very familiar with the conditions of country life.

I can well imagine readers who have patiently followed my arguments wishing to interrogate me in some such terms as these: "Assuming," they may say, "that we accept all you tell us about the neglect of the rural population, and agree as to the grave consequences which must follow if it be continued, what on earth can we do? Of course the welfare of the rural population is a matter of paramount importance to the city and to the nation at large; but may we remind you that you said the evil and the consequences can be removed and averted only by those immediately concerned — the actual farmers — and that the remedy for the rural backwardness was to be sought in the rural mind? "Canst thou minister to a mind diseased? Must not the patient 'minister' to himself?"

Fair questions these, and altogether to the point. I answer at once that the patient ought to minister to himself, but he won't. He has acquired the habit of sending for the physician of the town, whose physic but aggravates the disease. Dropping metaphor, the farmer does not think for himself. In rural communities, there is as great a lack of collective thought as of coöperative action. All progress is conditional on public opinion, and this, even in the country, is a very much town-made thing.

So I am, then, in this difficulty. My subject is rural, my audience urban. I have to commend to the statesmen and the philanthropists of the town the somewhat incongruous proposal that they should take the initiative in rural reform. Neither the thought nor the influence which can set in motion what in agricultural communities is no less than an economic revolution are to be found in the open country.

THE FARMER AND FINANCE¹

MYRON T. HERRICK

THE importance of agriculture as an economic and social factor is not a newly discovered fact. As long ago as 1859, in a speech before the Wisconsin Agricultural Society, Abraham Lincoln said, "Population must increase rapidly, more rapidly than in former times and ere long the most valuable of all arts will be the art of deriving a comfortable subsistence from the smallest area of soil. No community whose every member possesses this art can ever be the victim of oppression in any of its forms. Such community will be alike independent of crowned kings, money kings, and land kings."

Unfortunately, perhaps the truth contained in Lincoln's words was not sufficiently well appreciated to modify the course of the economic development of the country. Nations, like individuals, are accustomed to regard lightly those things that are easily acquired. Conditions in this country always have been so favorable to agriculture that it has been accepted as an industry needing little encouragement. On the other hand, manufacturing and commerce did not seem to possess the inherent qualities of self-development, and, as a result, the economic policy of the country has been consciously framed to build up these industries,—not exactly at the expense of agriculture, but at least with the consequence of diverting the attention of the people from the danger of neglecting farming interests. Consequently, the industry of

¹ From *The Atlantic Monthly*, vol. cxi, pp. 170-178. Reprinted by permission of the author and the publishers.

cultivating the soil has been left to develop along the lines of least resistance, — that of seizing temporary profits, without regard to future possibilities. The complaisant indifference with which agricultural development has been regarded has had its logical result. Agriculture has failed to progress with anywhere near the rapidity with which the population of the country and the demand for food-products have increased.

From 1900 to 1910 the population of the United States increased twenty-one per cent; during the same period the number of farms increased only ten and five-tenths per cent; which indicates that, in the ten years, rural population increased about one-half as much as the total population. In 1909 the per-capita production of cereals was only forty-nine and one-tenth bushels; in 1899 it was fifty-eight and four-tenths, — a decrease of nine bushels per head in ten years. Between 1899 and 1909 the aggregate production of cereals increased only one and seven-tenths per cent, but their market value was higher by seventy-nine and eight-tenths per cent in 1909 than in 1899, — the increase in price being forty-seven times the increase in quantity. In 1909 there was one farm for every thirteen and two-tenths persons; in 1910 there was one farm for every fourteen and five-tenths persons. On the average, therefore, each farm now has to furnish food for more than one more person than in 1900. In 1900, there were five and five-tenths acres of improved farm land per capita of population; by 1910 the per-capita improved acreage had declined to five and two-tenths acres.

These figures make it clear why the exports of food-stuffs in crude condition, and food animals, have decreased from \$227,300,000 or 16.59 per cent of the total exports, for the fiscal year of 1900 to \$99,900,000, or only 4.6 per cent of the total for the fiscal year of 1912; and why similar imports have increased from \$68,700,000 in 1900, to \$180,120,000 in 1912. Of course the splendid crops of this year will, for the

time being, alter the tendency of imports of foodstuffs to increase and of exports to decrease, but unfortunately experience indicates that another bumper crop is not likely for several years. Regardless of other influences the increasing disparity between the supply of and demand for foodstuffs, as shown by the foregoing data, would seem almost to furnish an adequate explanation for the fact that on October 1, 1912, Bradstreet's index number of prices made a new high record of \$9.4515.

Surprising as it may seem, it is within the last few years that the people of the United States have recognized the danger that lies in the increasing prices of food. The uneasiness with which the rise in the prices of necessities is now regarded is amply justified, for if there is a further considerable advance, a lowering of the standard of living of a great number of the American people, with its certain inimical consequences to the quality of our citizenship, is bound to occur. It is largely the apprehension of this possibility that has impelled the national government, the states, various associations, and individuals, to undertake the promotion of scientific farming, to the end that the output of the farms of this country may be raised to a maximum consistent with economic production and the conservation of the vital qualities of the soil. Educational activity of this sort is excellent and necessary, and should, if possible, be continued with greater enthusiasm. However agriculture is similar to other industries in that knowledge alone is not sufficient for success. Like those engaged in other kinds of business, farmers must have capital, in addition to knowledge and skill, and it is highly important that they obtain the capital they need on terms consistent with their credit.

What is being done to promote better farming, through education and the establishment of land-and-agricultural credit institutions, is due to the great importance of the industry, and not to any lack of intelligence on the part of the

farmers themselves. There is no more reason to assume that farmers are incapable of, or indifferent to, progress than there is to assume that bankers are deficient because they operate under a faulty and inadequate banking system. The farmers of the United States are the intellectual superiors of the farmers in any other country in the world, and, with equal facilities, they will set the pace in scientific agriculture.

A superficial knowledge of agricultural conditions in the United States is all that is necessary to understand that the particular pressing need of American farmers is financial machinery whereby the potential credit that they possess in abundance can be made negotiable. There is in this country a serious lack of financial institutions suited to supply farmers with funds. In this respect the United States is the most backward of any of the important nations of the world, and, consequently, it is safe to say that this is the prime reason why this country is so far behind many other countries in the per-acre production of food-stuffs. The average yield of grain in the United States is about fifty per cent less than it is on the continent of Europe, and the average per acre yield of potatoes is not more than thirty per cent of what it is in Germany. The most striking and important difference between farming conditions here and in many European countries, is that there farmers can readily obtain the funds they need, whereas in this country agricultural financing is difficult and costly.

In its capital requirements, farming is not unlike other industries and it is like other industries in that unless these capital requirements are supplied, progress will be slow and dubious. Like the merchant and the manufacturer, the farmer needs funds: first, for the purchase of property and for its permanent improvement; and second, for temporary purposes, — such as financing crops. These two general divisions of agricultural capital requirements should be preserved in the nature of loans that are made to secure funds.

Each of these two divisions can and should support its own credit, known respectively as land credit and agricultural credit. For the purpose of buying land and making permanent improvements, farmers should be able to make mortgage loans which have a long time to run, and which they can gradually repay by small yearly installments. Money invested in land or permanent improvements becomes fixed capital, and the proportion of a farmer's income that can be attributed to this sort of capital is so limited that it is illogical and unreasonable to expect the money so invested to be repaid except after a considerable period of years. The maximum length of a farm loan in this country is from three to five years, and, at the end of that time, it may or may not be possible to secure a renewal. As a rule, a farm-mortgage loan here has a very restricted market, and, consequently, the borrower frequently is obliged to pay an unreasonable rate of interest, and to submit to burdensome conditions from which the nature of the security he has to offer entitles him to be exempt.

Until some way is provided by which farm mortgages can be made the basis of a long-time security, with the marketable qualities of a railroad or industrial bond, and which can be sold at a price very nearly determined by the soundness of the security, the farmers of this country will continue to be burdened by the terms they must accept in making mortgage loans. That it is possible to create a security of this sort is shown by the success of the mortgage-loan companies and associations of foreign countries, whose obligations sell on a basis as favorable as that of bonds of the most successful railroad and industrial corporations. The farmers of the United States have as good a claim to cheap money as have railroad and industrial corporations, because farm land constitutes as good security as a railroad or factory. The marvelous and rapid development of the railroads of the country, to a very large extent, is due to the low cost at which they have been able to obtain vast sums of money for purposes

of development. There is absolutely no reason why just as cheap money should not be similarly available for the acceleration of agricultural development.

For the financing of temporary capital requirements, the personal credit of farmers should be made available. A farmer should not be obliged to mortgage his land to obtain funds to operate his property. As in the case of mortgage loans, the facilities in this country for making negotiable the personal credit of farmers are inadequate. There is no reason why the industrious capable farmer should not be able to borrow on his personal obligation as easily as does the merchant. A few American farmers do a banking business on a scale sufficiently large to make them desirable clients of local, state, and national banks, but, for the great majority, it is exceedingly difficult, if not impossible, to secure the personal credit accommodation they need, and to which their responsibility entitles them.

The success of foreign rural coöperative banking associations in reducing the rate of interest on loans to farmers, and the almost negligible amount that has been lost through the operations of these associations, clearly indicates that the high rate of interest that farmers in this country must pay, is due, not to any inherent weakness in their credit, but to the lack of properly organized facilities for making their credit negotiable. The lack of agricultural banking facilities is a tremendous hardship for the farmers. It means that they are laboring under a handicap which those engaged in no other kind of industry have to bear. Under present arrangements, farmers are paying two, two and a half, and three per cent more for money than they should. Upon the enormous amount of borrowed funds that the farmers of this country are obliged to employ, the excessive interest amounts to a sum so large that if it could be saved and expended in increasing the productivity of our farms, it would do much toward solving the problem of inadequate crops.

Fortunately, in the attempt to establish banking facilities for the farmers of the United States, it is not necessary to work in the dark. Many of the farm credit institutions of other countries are established on principles so broad and sound that, with some modifications, they can be adapted to conditions in this country. It is important, therefore, to know all we can of foreign land and agricultural credit institutions.

Germany is, perhaps, the country where agriculture is the most thoroughly and most intelligently organized. There are organizations in Germany for the purpose of supplying farmers with capital, and organizations for carrying on nearly all of the operations connected with the cultivation of the soil—all owned and managed by the farmers themselves. These organizations have revolutionized agricultural conditions in Germany. They not only have been the means of immensely increasing the productivity of the farms, but have also wonderfully improved the economic and social status of the farmers themselves. The first kind of agricultural coöperative organization started in Germany was for credit or banking purposes, and the entire fabric of agricultural coöperation in Germany now rests on its elaborate and efficient system of credit societies. Consequently it is reasonable to assume that these credit societies are responsible for the advanced condition of agriculture. Agricultural credit in Germany is based on the principles of self-help and coöperation.

In those European countries where land and agricultural-credit facilities are the most complete, as a rule, long-time mortgage loans and short-time personal loans are made by different institutions organized along different lines. Of the two kinds of credit institutions, perhaps the most successful and efficient are the Raiffeisen banks in Germany and the Credit Foncier in France. These two institutions differ in many essential particulars. A Raiffeisen bank is a mutual association, the Credit Foncier is an incorporated company;

the Raiffeisen banks loan for the most part on personal obligations, the Credit Foncier on first mortgages; the Raiffeisen banks secure most of their funds through the deposits of the farmers themselves, the Credit Foncier, through the debenture bonds that it issues, obtains funds for its loans from the conservative investors of all classes. It is because of these and other characteristic differences, and by reason of the wonderful success of these two institutions, that a knowledge of how the Raiffeisen banks and the Credit Foncier operate, and what they have accomplished, is peculiarly illuminating and profitable. Each of these two types of credit organizations possesses many features well adapted for systems of farm-credit institutions in this country.

The Raiffeisen banking system was founded by Frederick William Raiffeisen primarily for the purpose of freeing small farmers from the exactions of usurers. Raiffeisen knew nothing of finance, but he did understand the needs of those who, under the most discouraging circumstances, were bravely trying to gain a living from the soil — a class among whom credit was the particular and essential thing lacking. Sir Horace Plunkett, who has done so much for the agricultural development of Ireland, has said that the establishment of the Raiffeisen banks was second in economic importance only to the discovery of steam.

The Raiffeisen banking system is based on the principle of combining borrowers, to the end that by association they may secure credit facilities which, as individuals, it would be impossible for them to obtain. The fundamental provisions of the Raiffeisen banks, as contemplated by Herr Raiffeisen, were those of gratuitous management, unlimited liability of members, and a strictly local field of operation. For the most part the Raiffeisen banks adhere to those provisions. The membership of the banks is made up almost exclusively of farmers. In 1909 the number of members for each bank averaged 92. In the beginning the Raiffeisen banks had no

capital stock, but in 1876 a law was passed which made it necessary for them to issue shares of stock. The value of the shares was fixed at what was little more than a nominal amount. In 1909 the average paid-up capital per member was only 19 marks. The dividends that the Raiffeisen banks can pay are strictly limited — in no event can they exceed the rate of interest charged on loans. In 1909 these banks made a new profit in excess of 7,000,000 marks, but of this only 13 per cent was paid out in dividends — the balance being passed to the credit of the reserve fund. Because of the nature of its business the sphere of operation of each bank is very limited. It is necessary for the members to know each other, and to know for what purpose each loan is made, and to see that the money is so used. The Raiffeisen banks have done much to encourage thrift, because they have supplied a new incentive for saving. Inasmuch as the successful management of these banks requires a keen sense of responsibility on the part of the individual members, their moral effect is very considerable. Through their membership in the Raiffeisen banks many German farmers have become familiar with the nature and uses of credit and have acquired a knowledge of business. Altogether, these small rural banks have much improved the financial position and the moral and intellectual caliber of their members.

Because of its small size and restricted field of operation, the management of a Raiffeisen bank is very simple and inexpensive. In 1909 the average cost of management per bank was only 638 marks. The funds that the banks have to loan to their members are made up of the proceeds of the sale of capital stock, the reserve accumulated from profits, deposits — both savings and current account — and loans from the central coöperative banks, from other banks, and from individuals. In 1909, 88 per cent of these funds consisted of the deposits of the farmers themselves. The size of the average deposit is about \$370.00.

The loans which these banks make are either on current account — a form of overdraft often used by European banks — or for fixed periods. There is a tendency to extend the practice of making loans on current account, as that seems to be the form best suited for members. As a rule the loans made by the Raiffeisen banks are for a short period — usually for one year, with a maximum of five. For the most part the loans are granted on the personal obligations of the borrowers, to which usually is added the guaranty of one or two associate members. Occasionally loans are secured by deposit of collateral, or by mortgages. The average loan indicates, the Raiffeisen banks primarily are institutions for supplying credit accommodations to the small landowner.

The Raiffeisen banking system in Germany now comprises about 15,000 local banks, with a membership of approximately 2,000,000. These banks are now doing a yearly aggregate business of about \$1,500,000,000. The local Raiffeisen banks are grouped under 35 provincial banks, which, in turn, are affiliated with two general central coöperative banks. The local banks borrow money from the provincial banks, when required, and also loan to them their surplus funds. The provincial central banks are coöperative societies, with limited liability, and they occupy much the same position toward the local rural banks that the latter do toward their members. Their working capital is made up of the paid-up shares of their members (the local banks), of the deposits of the local banks, and of loans from other banks. By means of these provincial and central coöperative banks, agricultural credit in those parts of Germany where these banks operate possesses the element of fluidity in a remarkable degree — moving from those localities where it is not needed to those where it is needed. Altogether the Raiffeisen banks of Germany make up a wonderfully efficient organization, which, by supplying an enormous amount of agricultural credit, has revolutionized farming in Germany.

Up to the middle of the last century, France was almost entirely lacking in land- and agricultural-credit facilities. As a result of much agitation there was passed in 1852 a law providing for land-mortgage banks, and under this the Credit Foncier was organized. Because of the success of the *Landschaften* in Germany, many of the principles and methods of these associations were incorporated in the French law. The Credit Foncier is unlike the *Landschaften* in the very important particular that it is an incorporated company, not a coöperative association. The Credit Foncier has a capital of 200,000,000 francs and operated under the supervision of the state. In the beginning (1852) the government granted the Credit Foncier a subsidy of 10,000,000 francs, in order to help it make loans at a rate advantageous for that time. The subsidy was not renewed, and the state does not now intervene, except occasionally, to exercise control. The Credit Foncier possesses many special privileges, pertaining to the issuance of bonds and to its loans, that give it a practical, if not a legal monopoly of the kinds of business in which it is engaged.

The purposes of the Credit Foncier are: —

1. Lending money to landowners, counties, communes, and public services.
2. Creating and negotiating mortgage bonds, or, more properly, debentures, to a value which cannot exceed the amount of the sums due from its borrowers.
3. As a necessary accessory to its principal business, the Credit Foncier has the right to carry on ordinary banking operations within well-defined limits, and, in that connection, it is permitted to receive deposits; but the aggregate of deposits must not exceed 100,000,000 francs.

A large part of the funds received on deposit is employed in discounting commercial bills, on condition that they have two signatures and do not run over three months. The shares of the Credit Foncier which are dealt in on the Bourse, are issued at five hundred francs, and any one can own them.

The stock now receives six per cent dividends, and sells for about 750 francs a share. The government appoints the governor and two sub-governors, who, by virtue of their office, are members of the Council of Administration. There must also be three treasurers-general — state officials — among the 23 members of the Council of Administration. These treasurers are appointed by the general assembly of the company, but before presenting their names to the assembly it is customary to obtain the approval of the Minister of Finance. The general assembly represents all the stockholders, and is composed of the two hundred who own the largest amount of stock. These stockholders meet once each year to ratify the accounts, vote the dividends, and dispose of such other business as may properly be presented to them. The general assembly elects a Council of Administration of 23 members. The governor has a right to veto the acts of both the general assembly and the Council, but there are only a very few instances on record of his having used this power. The Council of Administration meets once each week, and, among other things, passes upon all loans.

The two principal kinds of loans made by the Credit Foncier are mortgage loans and communal loans, and its total outstanding loans now amount to about 4,000,000,000 francs. So far as this country is concerned that part of its operations covering the making of mortgage loans to landowners is of the greatest interest. Our municipalities now have a broad and steady market for their securities.

The Credit Foncier makes loans to landowners on the following terms: —

1. Short-time loans, without amortization, for a period of from one to nine years.
2. Long-time loans, with annual amortization for a period of from ten to seventy-five years.

The rate of interest on these loans is 4.30 per cent at the present time, and the rate is the same for all kinds of property.

The rate charged on a loan must not exceed the rate at which money is obtained from the sale of bonds by more than six-tenths of one per cent. Loans are made only on first-mortgage security, and the amount of the loan cannot exceed one-half of the value of the property, except that loans on wine and timber lands must not exceed one-third of their value. When the loan is made for a short period, the borrower pays each year only the amount of interest due, and the principal sum must be paid in full at the end of the term of the loan — from one to nine years. Long-time loans are amortized; that is they are gradually paid by means of an annuity, which includes the interest and a small fraction of the principal. As a rule, the borrower himself fixes the length of time that the loan is to run. The amortization extends over the whole period of the loan, so that the total of the interest and capital amount is repaid from a constant yearly annuity. Consequently, the cost of amortization depends on the length of the loan, and on the rate of interest. On a loan running for seventy-five years at 4.30 per cent interest, the annuity — including interest and amortization — is at the rate of 4.48 per cent per annum. The borrower has the right to pay the principal of the loan at any time, and to profit by the amortization already made. He can also make partial payments and thereby reduce the amount of the annuity.

The bonds issued by the Credit Foncier have no fixed maturity, but are called for payment by lot. Each payment of bonds must be of such an amount that the bonds remaining in circulation do not exceed the balance of the principal owed upon the hypothecated loans. If the government approves, there can be added to the bonds called for payment certain prizes and premiums. The funds received from the usual amortization, or anticipated payments, must be used to amortize or redeem bonds, or to make new loans. In general the bonds bear 3 per cent on the nominal capital, and the total cost of recent loans to the company, including interest, prizes,

and premiums, is about 3.60 per cent. The bonds are sold by public subscription, and may be paid for in installments. About every three years the company issues bonds sufficient to yield from 300,000,000 to 350,000,000 francs. The bonds are subscribed for by people of small means, and usually remain in their hands; consequently the quotations of the bonds show little fluctuation — less than French railway bonds. The company always keeps a few bonds on hand for sale, but the bulk of them are disposed of by public subscription.

The Credit Foncier has departed from its original purpose to the extent that at the present time a very large part of its loans are made on urban real estate. However, this is simply an incident, and does not reflect on the applicability of the principles on which the Credit Foncier is founded, to an institution confining its operations to loans on rural land.

In view of the wonderful success of the Credit Foncier and kindred institutions, it is hard to understand why the principle of debenture bonds, secured by long-time real-estate loans, payable by amortization, should not, long ago, have been put in practice in this country. The business of loaning money on farm mortgages in the United States is still carried on in a primitive way. We are still making farm-mortgage loans for such short periods that frequent renewals — often very embarrassing to debtors — are inevitable. The existence of facilities whereby farm-mortgage loans could be made for long terms — say fifty years or more, with provision for easy payment by amortization — would be a wonderful boon to American farmers, and a decided stimulant to the development of efficient, scientific farming.

Neither the Raiffeisen banks nor the Credit Foncier involve strange financial principles. In this country, the splendid record of the mutual savings banks proves that coöperation can be safely and wisely applied in banking. We are familiar with the principle of debenture bonds, and we know something of the principle of amortization. Of course it is impossible

to pick up any of the foreign farm-credit systems, out of its social setting, and say, offhand, that it would be as successful in this country. The history and success, as well as the details of organization, of every one of the foreign farm-credit systems have been very largely determined by the temperament, the social and economic status of the people, and by the conditions of climate and soil of the country in which they are situated. Consequently in working out the plans of agricultural- and land-credit systems for this country, we must be cautious in our adherence to foreign models. We must remember that the value and success of every institution depends upon its being in harmony with its environment.

The importance of adequate credit facilities for our farmers is beginning to be keenly appreciated. The American Bankers' Association, the Southern Commercial Congress, and other organizations are doing splendid pioneer work by agitating the need of an agricultural banking system, and by disseminating information as to what has been accomplished abroad.

The establishment of agricultural- and land-credit systems in this country is not a political question; it is an economic question of the gravest import — the proper solution of which demands a patriotic national purpose and constructive ability of a high order.

THE REALM OF THE COMMONPLACE¹

L. H. BAILEY

NOT long ago, I sat at the window of a hotel chamber, looking down a thoroughfare of a great city. I saw thousands of human beings pouring in and out, up and down, as if moved by some relentless machinery. Most of them were silent and serious and went quickly on. Some sauntered, and returned again and again as if looking for something that they did not expect to find. Carriages went up and down in endless pageant. Trolley-cars rushed by, clanging and grinding as they headlonged into the side streets. Meretricious automobiles with gorgon-eyed drivers whirled into the crowds, scattering the street crossers. Men passed with banners and advertising placards. Women paraded with streaming head-gear and tempestuous gowns. A resplendent trumpeter rolled by in a tallyho. A hundred other devices to attract the eye and distract the ear came out and vanished; and yet no one stopped and no one seemed to care. Now and then I saw a knot of men form, as some one fell or as wagons collided; but the knots as quickly dissolved, and I saw that they were made up of the idle who were amused for the moment and then floated on hoping for fresh entertainment. A hurdy-gurdy attracted only a bevy of scurrying children. A little girl with an armful of newspapers moved in and out unnoticed.

Suddenly a dog leaped down a flight of steps and was followed by two little children laughing and screaming. The dog felt his freedom and the children were in pursuit. The

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crowd stopped; the stern-faced men with high hats stopped; the well-dressed women stopped. Even a cabby pulled up his horse as the children dashed on the pavement after the escaping dog. Back and forth the children ran. On the far side of the street the people halted and took their hands out of their pockets. The children caught the dog and bundled it lovingly into the house; the crowd applauded, and dispersed.

Every person seemed to be surprised that he had stopped. From my height I thought I could discern the reason for this curious phenomenon: in all the blare and blazonry of that tumultuous thoroughfare, this was the only episode of real spontaneous and unaffected human nature. All else was a kind of acting, and every person unconsciously recognized that it was so. I thought how rare must common naturalness be and how much has it been driven from our lives!

If a person has given any serious thought to public questions, he has his own contribution to make as to the causes of present conditions and the means of bettering them; so I make mine: what is now much needed in the public temper is such a change of attitude as will make us to see and appreciate the commonplace and the spontaneous, and to have the desire to maintain and express our youthful and native enthusiasms. And it is my special part to try, so far as possible, to open the eyes and the heart to nature and the common-day environment. My point of view is, of course, that of the countryman, and no doubt it has the countryman's bias.

So great has been the extension of knowledge, and so many the physical appliances that multiply our capabilities, that we are verily burdened with riches. We are so eager to enter all the strange and ambitious avenues that open before us that we overlook the soil at our feet. We live in an age of superlatives, I had almost said of super-superlatives, so much so that even the superlatives now begin to pall. The reach for something new has become so much a part of our lives that we cease to recognize the fact and accept novelty

as a matter of course. If we shall fail to satisfy ourselves with the new, the strange, and the eccentric, perhaps we shall find ourselves returning to the old commonplace and the familiar, and perhaps we shall be able to extract new delights from them because of the flights we have taken. Perhaps in their turn the commonplaces will be again the superlatives, and we shall be content with the things that come naturally and in due order. Certain it is that every sensitive soul feels this longing for something simple and elemental in the midst of the voluminous and intricate, something free and natural that shall lie close to the heart and really satisfy our best desires.

It is not likely that we shall greatly simplify our outward physical and business affairs. Probably it is not desirable that we should do so, for we must maintain our executive efficiency. We have seen a marvelous development of affairs, expressed in the renovation of a hundred old occupations and the creation of a thousand new ones. Most of these occupations and businesses are clear gain to the world, and we may expect them to endure. This rise of affairs has emphasized the contrasts of business and of home. Machinery and complexity belong to affairs; but a simpler and directer mental attitude should belong to our personal and private hours. Perhaps our greatest specific need is a wholesome return to nature in our moments of leisure, — all the more important now that the moments of leisure are so few. This return to nature is by no means a cure-all for the ills of civilization, but it is one of the means of restoring the proper balance and proportion in our lives. It stands for the antithesis of acting and imitation, for a certain pause and repose, for a kind of spiritual temper, for the development of the inner life as contrasted with the externals.

The outlook to nature is, of course, the outlook to optimism, for nature is our governing condition and is beyond the power of man to modify or to correct. We look upward and outward

to nature. Some persons have supposed, however, that the "contentment" preached by the nature-lover implies unvexed indifference to the human affairs of the time, and that therefore it makes for a kind of serene and weak utopianism; but, to my mind, the outlook to nature makes for just the reverse of all this. If nature is the norm, then the necessity for correcting and amending the abuses that accompany civilization becomes baldly apparent by very contrast. The repose of the nature-lover and the assiduous exertion of the man of affairs are complementary, not antithetical, states of mind. The return to nature affords the very means of acquiring the incentive and energy for ambitious and constructive work of a high order; it enforces the great truth that, in the affairs of men, continued progress is conditioned upon a generous discontent and diligent unrest.

By nature, I mean the natural out-of-doors, — the snow and the rain, the sky, the plants, the animals, the running brooks, and every landscape that is easy of access and undefiled. Every person desires these things in greater or lesser degree: this is indicated by the rapidly spreading suburban movement, by the astonishing multiplication of books about nature. Yet there are comparatively very few who have any intimate contact with nature, or any concrete enjoyment from it, because they lack information that enables them to understand the objects and phenomena.

The currents of civilization tend always to take us out of our environment rather than to fit us into it. We must recast our habits of thought so as to set our faces nature-ward. This is far more important than any effort at mere simplicity or toward lopping off the redundancies: it is fundamental direction and point of view.

The outlook to nature is the outlook to what is real, and hearty, and spontaneous. Our eager civilization prematurely makes us mentally old. It may be true that the span of man's life is increasing, but at twenty we have the knowledge

and the perplexities that our grandfathers had only at forty. Our children may now be older when they are graduated from school, but the high school course of to-day is more complex than was the college course of fifty years ago. All this has a tendency to lessen the years of free and joyous youth. You have only to see the faces of boys and girls on your city streets, to discover how old the young have grown to be. In home and school our methods have been largely those of repression: this is why the natural buoyant outburst that I saw on the city thoroughfare challenged such instant attention and surprise. We need to emphasize the youthful life.

Therefore, I preach the things that we ourselves did not make; for we are all idolaters, — the things of our hands we worship. I preach the near-at-hand, however plain and ordinary, — the sky in rain and sun; the bird on its nest and the nest on its bough; the rough bark of trees; the frost on bare thin twigs; the mouse skittering to its burrow; the insect seeking its crevice; the smell of the ground; the sweet wind; the leaf that clings to its twig or that falls when its work is done. Wisdom flows from these as it can never flow from libraries and laboratories.

“There be four things,” say the Proverbs, “which are little upon the earth, but they are exceeding wise:

“The ants are a people not strong, yet they prepare their meat in the summer:

“The conies are but a feeble folk, yet make they their houses in the rocks;

“The locusts have no king, yet go they forth all of them by bands;

“The spider taketh hold with her hands, and is in kings’ palaces.”

Some of us do not enjoy nature because there is not enough sheer excitement in it. It has not enough dash and go for this uneasy age; and this is the very reason why we need the solace and resource of nature so much. On looking over the lists of Christmas books I was surprised to find how often the word “sensation” occurs. In the announcement of the

forthcoming number of a magazine, I find twenty articles, of which at least nineteen are to be "tragic," "thrilling," "mystery-laden," or otherwise unusual. The twentieth one I hope to read. One would think that a piece of writing is valuable in proportion as it is racy, exciting, startling, striking, sensational. In these days of sensational sales, to have a book sell phenomenally well is almost a condemnation of it. An article or book that merely tells a plain story directly and well is too tame; so even when we write of nature we must pick out the unusual, then magnify and galvanize it. From this literature the reader goes out to nature and finds it slow and uninteresting; he must have a faster pace and a giddier whirl of events. He has little power to entertain himself; and, his eyes never having been trained to see what he looks at, he discovers nothing and the world is vacuous and void. He may find temporary relief in some entertainment provided for him out of hand, as the so-called news of the newspapers or some witless frippery on the stage. Yet, unless all poets and philosophers have misled us, the keenest and most resourceful delights that men have found have been the still small voices of the open fields.

There is another objection to much of the nature writing, — the fact that it is unrepresentative of nature. It exploits the unusual and exceptional, and therefore does not give the reader a truthful picture of common and average conditions. This has been true to some extent even of text-books, — they choose so-called "typical" forms and structures, forgetting that typical examples exist only in books for purposes of definition. The best nature writing, as I conceive of it, is that which portrays the commonplace so truthfully and so clearly that the reader forthwith goes out to see for himself. Some day we shall care less for the marvelous beasts of some far-off country than for the mice and squirrels and woodchucks of our own fields. If I were a naturalist, I should go forthwith to study the mice and then write of them for all

children; for, of all untamed animals, what ones are known to a greater number of children? — and yet what do the children know except that they have been early taught by their elders to abhor these animals?

The embodiment of all grace and agility, of all quick dispatch, of all neat habits and of comeliness, of unseen and devious ways, is the mouse. What other object was ever so swift and silent and graceful as it slides along the corners of your room as noiseless as a shadow! What explorer was ever so successful as it peers into drawers and sniffs in cupboards! A few years ago a mouse was my nightly companion for perhaps a month. He was employed in some great engineering enterprise in the timber work over my chamber. Hour by hour he alternately gnawed rapidly, stopped, gnawed and stopped again, in regular intermittence. I suppose that in the moments of silence he was listening for eavesdroppers; or perhaps he was resting. He began far at one side of my ceiling and worked steadily toward the center. I wondered what curious plans he had in his head and whether he had calculated on the cost of all his labor. At length the region of his excavations lay immediately over my head, and my interest in him, although he was unseen, became quite unusual. At last he seemed to have made an extra effort, another silence came, — a silence that was never broken. For nights I waited; and to this day I wonder. In my boyhood the field mice were a constant source of entertainment and mystery. I found them scuddled in the corn shocks, burrowed in the dry grass, nesting in the corn-crib. I saw their faint narrow trails on new-fallen snow, leading into strange pigmy caverns. One winter I helped to fell a tree, in the hollow hole of which we found a full peck of beechnuts neatly shelled and stored against the cold. Let us have the commonplace, for indeed it is rare!

Just now I said something of the “news.” It is important that we recur to this subject, since we are a people of news

readers, and continuous reading strongly, though silently, influences our outlook toward nature and affairs. Much of what is called news is so unimportant that it is not worth the while of a person whose time is of value; but my chief objection to it, as to some of the nature writing, is that it is no way representative of human affairs, — if it were, I suppose it would not be new and therefore would not be news. It is made up to a large extent of exceptional and meaningless episodes and extravagancies. Yesterday I saw hundreds of persons on cars and ferries eagerly reading the “news.” I bought a paper resplendent with photography and colored ink. The first page had eight articles, seven of which were devoted to cases of divorce, common rascality and crime, and unimportant local accidents, all displayed as if it would advantage a man to read them. Only one article dealt with public affairs, and this was hidden underneath small headlines. The newspaper had no sense of proportion. All the details of a divorce case were given with as much circumstantial minutiae as if it were of equal importance with a debate in Congress or the deliberations of the international peace conference. As I was about to write these sentences, I chanced to pick up the following editorial paragraph from a country newspaper (the Seneca Falls, N.Y., *Reveille*):

The sound and wholesome qualities which make for all that is most prized in life are to be found in the great masses of the people, and are scarcely touched by the currents of the time which make for evil, and with which the news of the day is necessarily so largely concerned. It is not the doings or the ways of the great bulk of the people — those who quietly earn a modest living by ordinary industry — that furnish much material either for news or for comment. We take all that for granted, and when we think of the tendencies of the time, we almost forget its existence. When a touch of nature happens to bring into unaccustomed relief the existence of the homely but sturdy and sterling virtues of the great American people, their right-mindedness and true-heartedness, it is well to draw from the event the lesson that manhood and merit are after all the things which create the very best character for our country and government.

We gather from this extract the opinion that what we call the "slow" and "dull" may, after all, be the saving strength of the nation. In the hamlets and villages and small country cities, great problems are working themselves out just as effectively as in the mighty cities; and although slowly, or even because slowly, they may be working out more fundamentally than elsewhere. The great mass of mankind is unrecorded and practically unknown. A few of us are actors, and we pass with some noise and flourish across the stage; but the sources of events are behind and beyond. I have heard the saying attributed to a statesman that if the discussions either at the country four-corners or in the president's cabinet were to cease, it were better to do away with the cabinet. Public opinion does not seem to originate to any extent with the leaders: the leaders are more likely to catch and voice the crystallizing sentiments of the commonplace, originating slowly and perhaps unconsciously with those who work first-handed with the forces that make for wealth.

We might go even farther than the hamlet or the town, — to the family unit on the remotest farm. This unit is considered by most of the other members of the race to be the commonplace of the commonplace; yet, along with the farming, human problems are being worked out. There boys and girls are being reared and even trained, who some day may come to your cities and distance your own sons and daughters; for it is a discouraging fact that, with all we are doing for schooling, merit and efficiency do not seem to increase in proportion, and those whom we are in the habit of calling uneducated may take the highest prizes that the world has to give. The farm, in its turn, is being exploited in our current literature; and, significantly enough, much of this literature is of the sensational order. Of all things that should not be sensationalized, the farm is the chief. The farm need not be prosaic nor devoid of intellectual interest; but its very spirit is that of stability and constancy. We

should develop the ideals in every occupation; but the ideal should follow closely the facts and the spirit of the real. We need to idealize the commonplace, for then we show its possibilities.

We need a new literature of nature and the open country, a literature that shall not be merely and plainly descriptive. We need short, sharp, quick, direct word-pictures that shall place the object before us as vividly as the painter would outline some strong figure with a few bold strokes of his brush. Every object and every common labor awaken some response beyond themselves, and this response can be set to words. The man employed at useful and spontaneous work is a poetic figure, full of prophecy and of hope. The cow in the field, the tree against the sky, the fields newly plowed, the crows flapping home at night, the man at his work, the woman at her work, the child at its play — these all are worth the stroke of the artist.

I saw a man walking across the fields, with spade on his shoulder and dog at his side; I saw his firm long stride; I saw his left arm swing; I saw the weeds fall beneath his feet; I saw the broad straight path that he left in the grass. There were brown fields, and woods in the first tint of autumn. I saw birds; and in the distance was the rim of the sky. And beyond him, I saw the open ditch to which he was returning.

With the nature writers I like to include some of the authors who do not write specific natural history topics. If they write from the out-of-doors, with a keen love of it and a knowledge of what it comprises, adding to it touches of good human nature, then they lead men to the open as effectively as those to whom we customarily apply the term "nature-writer." The landscape is as important as any object that it contains, and the human sentiment is more important than either. These writers invariably write the commonplace, and touch it into life and meaning. One of the greatest of these writers, to my thinking, is Stevenson, — simple, direct, youthful,

tender and heartsome. His life was with nature; his work touches the cosmic and elemental.

O Stevenson! On far Samoa's tropic shore
You moored your slender bark,
And there in calm secludedness did live
To write the spirit of your gentle soul,
And over all the world to pour
The fragrance from the tropic of your heart.

And thence you passed beyond, —
Passed not with the proud acclaim
Of pageant and tempestuous bells
That drown themselves in black forgetfulness, —
But fell away as falls the wind at eventide;
And all the trees on all the isles and shores
Bowed their heads in solitude.

I like to think that our nature poetry is also leading us natureward in a very practical way, since it is becoming more personal and definite, and brings us into closer touch with specific objects and demands greater knowledge of them. It has been the progress of our attitude toward nature to add the concrete to the abstract; and this may be expected to proceed so far that every object of the environment and every detail of our lives will be touched with inspiration. If I cannot catch a note of inspiration from the plainest thing that I touch, then to that extent my life is empty and devoid of hope and outlook. The great voices appealed to the early Greeks, — the thunder, the roaring wind, the roll of the waves, the noise of war; but we do not know that the shape of the leaf, and the call of the young bird, and the soft gray rain, appealed much to them. The Greek lyrics are mostly personal or personifying, and lack any intimate touch with the phases of natural phenomena. As men have come more and more to know the near-at-hand and the real in nature, this knowledge has been interpreted in the poetry; for poetry always reflects the spirit of the time. All English poetry illustrates this general tendency; but what we are in the

habit of calling "nature poetry" is of comparatively recent growth. It is to be hoped that we shall never have less nature poetry that expresses the larger moods; but we must have more that is specific and concrete in natural history details, and which will still be poetry, for the race is coming nearer to the environment in which it lives. The individual seems sometimes to recapitulate the experience of the race; as each of us grows old and conventionalities lose their meaning and the small voices make a stronger appeal, we are conscious that we have had Wordsworth's experience:

In youth from rock to rock I went,
 From hill to hill in discontent,
 Of pleasure high and turbulent,
 Most pleased when most uneasy;
 But now my own delights I make, —
 My thirst from every rill can slake,
 And gladly Nature's love partake
 Of thee, sweet Daisy!

It is often said that as this is a practical age, with industrialism developing everywhere, therefore poetry must die away. Nothing could be farther from the truth. It is true that industrialism is developing at great pace; this, in fact, is the glory of our time, for civilization has entered on a new epoch. Men's minds are concerned with things that never concerned them before; yet, the resources of the old earth have merely been touched here and there, and the wealth of mankind will increase. But all this does not mean that sentiment is to be crushed or that the horizon of imagination is to be contracted, but rather the reverse. The flights of science and of truth are, after all, greater than the flights of fancy. If sentiment is necessarily eliminated from business transactions, it is all the more important that it be added to the recreation and the leisure. The great constructive agencies of the time are essentially poetic; and the world never needed poetry so much as now. This thought is forcibly expressed in Charles Eliot

Norton's advice, that has now been so effectively used by the press:

Whatever your occupation may be, and however crowded your hours with affairs, do not fail to secure at least a few minutes every day for refreshment of your inner life with a bit of poetry.

But this poetry of nature must be of the new kind. Perhaps the day of the formal "sustained" poem has passed, — with its ambitious disquisitions, long periods, heavy rhetoric, labored metaphors. It is a question, also, whether even the sonnet, although highly artistic, is free and plastic enough to express the nature-feeling of our time; for this feeling seems to be more and more impatient of historical limits and forms. The new nature poetry must be crystal clear, for we have no time for riddles, even though they are set in metre and rhyme. It must be definite, and it must apply. The best nature poetry will be hopeful, joyous, and modern. At least some of it must deal with objects, phenomena, and emotions that are common to common men: then it will become a part of men's lives, not merely an accomplishment to be used with proper manners and on occasion. Perhaps this more vital song will relieve poetry writing of much that is too theoretical and fine-spun; and I hope that it may also divert the current from the weak and petty lovelorn type of verse-making which exploits personal love affairs that ought to be too private and sacred for publication and which in the end contributes nothing to the poetry of emotion.

This poetry, whether its flight is small or great, must be born of experience, and must be intrinsic; it must be the expression of a full heart, not the sentiment of a looker-on. It must not be assumed or forced. No man whose heart is not full of the beauty and meaning of a leaf should write even a distich on the leaf. So, too, the nature poem of wide reach must be the poem of the man who is free. Such poetry must spring from the open air; perhaps it must be set to words there, — at least outside the city. The city will have its

great poems, but they will rise out of the city as Venus rose out of the sea. It seems to me that we have really very little genuine nature poetry. Our poets, in spirit or in fact, now write largely from the city and the study outward, and their work is bookish. The product is the cultured poetry of the library and the study, and is under the influence of the schools. It continues to be burdened with outworn and useless metaphor, and it follows traditional forms of verse and line, as if verse and line were more than essence. Walt Whitman — poet of the commonplace — has most completely freed himself from the bondage of literary form; and he is only an earnest of what shall come. It is doubtful whether the great nature poet will be taught in the formal curricula of the schools. His spirit and his method will be as unconfined as the inaccessible mountains, the great plains, or the open sea. His poetry must be much more than pleasing and local: it must be rugged and continental.

It must be true that the appreciation of poetry is increasing; and poetry is prophecy. If it is not increasing, then our education is worse than most of us think; but if appreciation of poetry is increasing, then we are acquiring a stronger hold on aspirations that are simple and elemental and universal. I am constantly surprised at the poems that busy and practical men know; and also at the poetry that many busy men can write. There is reason to believe that there were never so many poets in the world as now. Poetry-making is not an occupation, but the incidental spark that strikes off from useful labor; it is the result of full and serious lives. The roll of machinery is rhythm and rhyme; the blowing of the wind is music.

It has been my fortune to have had many years' experience in the teaching of farm boys. They are interesting boys, — strong, virile, courageous. They have not been stuffed and pampered, and have not had too much schooling. They have had the tremendous advantage of having been let alone,

and of having developed naturally. They hold their youth; their minds are capable of receiving new impressions with faith and enthusiasm. It is my habit to call these agricultural students together twice each month, and, amongst other exercises, to read them poetry. Usually at first they are surprised; they had not thought of it before; or they thought poetry is for girls: but they come again. They may hide it, but these farm boys are as full of sentiment as an egg of meat. There was one fellow who had to support himself and help members of his family. He was a good student, but the lines of his life had been hard. Whenever he called at my office it was to ask advice about money affairs or to tell me of difficulties that he feared he could not overcome. Apparently there was no sentiment in his life, and no room for it. One evening I read to the students Matthew Arnold's "Buried Life." The next day, Jenkins came to my office, entered hesitatingly as if requesting something that he might not have, and asked whether I would loan him the poem till he could learn it, for he could not afford to buy.

I believe, then, in the power of poetry, — in its power to put a man at work with a song on his lips, and to set the mind toward nature and naturalness. I like the definite poem of a tree, or a stone, or a dog, or a garden, if only it tells the truth and stops when the truth is told. The old-time short nature poem was wont only to point a moral, — usually dubious and far-fetched and factitious — having little vitality of its own. It really was not a nature poem, for the real nature poem is its own moral. The poems and stories of the Old Testament are always interesting to my students because they have something to say, they are direct, not surfeited with adjectives or burdened with rhetoric, and they are moral because they tell the truth and do not preach. We need to treasure the nature poem because it contains the elements of youth. So weary-old have we grown that we seem to be afraid to express our real selves; when now and

then some person expresses himself in high places unconventionally and with native feeling, we hail him as a "strong man." It is only when we are with ourselves under the free open heaven that we seem to be able to feel things keenly and newly and freshly. When in the open I am hopeful and resilient; when in my study I am conventional and dull. I wrote this lecture in my study.

We need now and then to take ourselves away from men and the crowd and conventionalities, and go into the silence, for the silence is the greatest of teachers. Walt Whitman expresses this well:

When I heard the learn'd astronomer,
 When the proofs, the figures, were
 ranged in columns before me,
 When I was shown the charts and
 diagrams, to add, divide, and measure them,
 When I sitting heard the astronomer where
 he lectured with much applause in the lecture-room,
 How soon unaccountable I became tired and sick,
 Till rising and gliding out I wander'd
 off by myself,
 In the mystical and moist night-air, and
 from time to time,
 Look'd up in perfect silence at the stars.

It will be gleaned from what has been said that we are to consider literature, including poetry, to be one of the means of the enjoyment of nature. It is fundamentally important, however, that we regard literature only as a means: it is not nature. Literature has its own place and value; beyond all this, is our point of view toward the natural world in which we live. One can never be fully appreciative of this natural world unless he has technical knowledge of some special part of it. One assuredly cannot be zoölogist, geologist, botanist, and meteorologist; but if he has intimate personal knowledge of one limited part, he has the key to the whole. As the real love of nature rests on knowledge,

the person must have pursued some branch of natural history for a time with serious purpose, — the purpose to discover and to know the subject-matter for himself. This gives him point of view; tells him what to look for; enables him to look beneath the surface; trains his judgment as to causes and effects; guides him in distinguishing the essential; saves him from humiliating error.

But before one takes up any serious bit of study for himself, he must have the desire to take it up. In every person there is a latent desire to know something of the enclosing world. This desire is usually ironed out in the intellectual laundering processes. It is important that some one lead on this desire before it is overwhelmed by a multitude of less relevant affairs. In some persons this native desire is so strong that nothing extinguishes it: these persons become professional investigators and widen the boundaries of knowledge. Most of us, however, must give our main thought to other matters, and let the outlook to nature be chiefly a well-guided affection. Having this reasonable affection, the proper literature deepens it and adds a charm of its own.

The best possible introduction to nature is that afforded by a sympathetic person who knows some aspect of nature well. You imbibe your friend's enthusiasm at the same time that you learn birds, or plants, or fishes, or the sculpturing of the fields. I say enthusiasm, for this is quite as important as knowledge, — perhaps it is more important than knowledge. But by enthusiasm I mean never mere exclamatory demonstration, but that quiet and persistent zeal that follows a subject to the end for the love of it, even though it take a month. This person need not be a professed "scientist," unless he is also a good teacher and knows what is most important in the subject and most relevant to you. The earlier the child has such a guide — if arrived at the age of reason — the more vital and lasting the effect: even one or two excursions afield may change the point of view and open

the way for new experiences, although neither the guide nor the child may be aware of it at the time. The ideal guide was "Gramp," as James Buckham knew him (*Country Life in America*):

What a man to fish and camp,
What a hand to hunt and tramp
Up and down the woods, was Gramp!

How he led me, high and low,
Plunging through the brush and snow!
Boy-like, how I loved to go!

Oh, the sweet days that we spent
In the forest's pure content!
Oh, the long, still miles we went!

Keen-eyed Gramp! How well he knew
Where the biggest berries grew,
Where the witch-like woodcock flew!

Learned was he in all the lore
Of the wood-wise men of yore —
Subtle knowledge, taught no more.

Ah, a happy boy was I,
Loving God's free woods and sky,
With dear Gramp to teach me why!

That which is first worth knowing is that which is nearest at hand. The nearest at hand, in the natural environment, is the weather. Every day of our lives, on land or sea, whether we will or no, the air and the clouds and the sky surround us. So variable is this environment, from morning till evening and from evening till morning and from season to season, that we are always conscious of it. It is to the changes in this environment that we apply the folk-word "weather," — that is akin to wind. No man is efficient who is at cross-purposes with the main currents of his life; no man is content and happy who is out of sympathy with the environment in which he is born to live: so the habit of grumbling at the

weather is the most senseless and futile of all expenditures of human effort. Day by day we complain and fret at the weather, and when we are done with it we have — the weather. There is no other effort at which human beings are so persistent, and none at which they are so universally unsuccessful. The same amount of energy put into productive wholesome work would have set civilization far in advance of its present state. "What cannot be cured must be endured;" but there is really nothing in the weather to cure. It is not a human institution, and therefore it cannot be "bad." I have seen bad men, have read bad books, have made bad lectures, have lived two years about Boston, — I have never seen bad weather!

"Bad weather" is mainly the fear of spoiling our clothes. Fancy clothing is one of the greatest obstacles to a knowledge of nature: in this regard, the farm boy has an immense advantage. It is a misfortune not to have gone barefoot in one's youth. A man cannot be a naturalist in patent-leather shoes. The perfecting of the manufacture of elaborate and fragile fabrics correlates well with our growing habit of living indoors. Our clothing is made chiefly for fair weather; when it becomes worn we use it for stormy weather, although it may be in no respect stormy weather clothing. If our clothes are not made for the weather, then we have failed to adapt ourselves to our environment, and we are in worse state than the beasts of the field. Much of our clothing serves neither art nor utility. Nothing can be more prohibitive of an interest in nature than a millinery "hat," even though it be distinguished for its floriculture, landscape gardening, and natural history.

The discomforts of the weather are largely the result of unsuitable garments. I am always interested, when abroad with persons, in noting the various mental attitudes toward wind; and it is apparent that most of the displeasure from the wind arises from fear of disarranging the coiffure or from

the difficulty of controlling a garment. Let us sing the wind!

The wind, the wind,
The moaning wind!
In monotone
Alone, alone
It weeps and groans,
It croons and moans,
And the chilly moon
Rides aloft at noon
In the moaning, moaning wind.

The wind, the wind,
The thieving wind!
It whisks and starts,
It scuds and darts,
It flings the sheaves,
It shakes the leaves,
And the apples lie
Where the weeds are high
In the thieving, thieving wind.

The wind, the wind,
The summer wind!
In idle ease
Thro' weeds and trees
It wafts and woos,
It soothes and sues,
And I fall asleep
Where the grass is deep
In the summer, summer wind.

The wind, the wind,
The winter wind!
It sweeps and soars,
It howls and roars,
It drives the snow,
It piles the floe,
And the drifting sky
Runs sterile and dry
In the winter, winter wind.

Our estimate of weather is perhaps the best criterion of our outlook on nature and the world. The first fault that I would correct in mankind is the habit of grumbling at the weather. We should put the child right toward the world in which he is to live. What would you think of the mariner who goes to sea only in fair weather? What have not the weather and the climate done for the steadiness and virility of the people of New England? And is this influence working as strongly to-day as in the times when we had learned less how to escape the weather? We must believe in all physical comfort, — it contributes to the amount of work that we can accomplish; but we have forgotten that it is possible to bear an open storm with equanimity and comfort. The person who has never been caught in rain and enjoyed it has missed a privilege and a blessing. I never want to live in one of those featureless climates that cannot get up spunk enough to raise a storm. Give us the rain and the hail and the snow, the mist, the crashing thunder, and the cold biting wind! Let us be men enough to face it, and poets enough to enjoy it. In "bad" weather is the time to go abroad in field and wood. You are fellow then with bird and stream and tree; and you are escaped from the crowd that is forever crying and clanging at your heels.

Weather is the universal environing condition: it is but a step from this environment to the special objects therein. The customary objects are the ones that should first receive attention. Do not wander in remote places or in foreign lands merely to find nature: she is at your door. Touch the things near at hand: you will then understand the things far away. The first consideration of special study should be the inhabitants of your yard and garden: they are yours; or if they are not yours, you are not living a right life. Do you wish to study botany? There are weeds in your doorway or trees on your lawn. You say that they are not interesting: that is because you do not know them. Every

plant is as interesting as every other plant; if not, the fault is not with the plant. We have made the mistake all along of studying only special cases. We seem to have made up our minds that certain features are interesting and that all other features are not. It is no mere accident that many persons like plants and animals but dislike botany and zoölogy. It is more important to study plants than special subjects as exemplified in plants. Why does the weed grow just there? Answer that, and you have put yourself in pertinent relation with the world out-of-doors.

Of course he who is to lead an effective and reposeful life must be in sympathy also with artificial environments, as factories and streets; but it is not my special purpose to teach of these. The natural environment is the more important, because it is the condition of our existence. The other environments are incidental, human, capable of great improvement; yet we are brought into sympathetic touch with them if we have had the training of a wholesome outlook to nature. I like Timrod's sonnet to the factory smoke:

I scarcely grieve, O Nature! at the lot
That pent my life within a city's bounds,
And shut me from thy sweetest sights and sounds.
Perhaps I had not learned, if some lone cot
Had nursed a dreamy childhood, what the mart
Taught me amid its turmoil; so my youth
Had missed full many a stern but wholesome truth.
Here, too, O Nature! in this haunt of Art,
Thy power is on me, and I own thy thrall.
There is no unimpressive spot on earth!
The beauty of the stars is over all,
And Day and Darkness visit every hearth.
Clouds do not scorn us; yonder factory's smoke
Looked like a golden mist when morning broke.

I would preach the surface of the earth, because we walk on it. When a youth, I was told that it was impossible for me to study geology to any purpose, because there were no

outcroppings of rocks in my region. So I grew up in ignorance of the fact that every little part of the earth's surface has a history, that there are reasons for sandbanks and for bogs as well as for stratified rocks. This is but another illustration of the old book-slavery, whereby we are confined to certain formal problems, whether or not these problems have any relation to our conditions.

The landscape is composed chiefly of three elements, — the surface of the earth, the sky, the vegetation. I well remember what a great surprise it was to learn that the sculpturing of the fields can be understood, and that the reasons for every bank and knoll and mud-hole can be worked out. There was a field back of the barn that contained hundreds of narrow knolls, averaging three to four feet high. At one side of every knoll was a narrow deep pocket that until midsummer was filled with water. The field was so rough that it could not be plowed, and so it was continuously used as a pasture. It was an Elysian field for a boy. Every pool was a world of life, with strange creatures and mysterious depths, and every knoll was a point of vantage. Near one edge of the field ran a rivulet, and beyond the rivulet were great woods. What was beyond the woods, I could only surmise. I recall how year by year I wondered at this field, until it became a sort of perpetual and unexplainable mystery, and somehow it came to be woven as a natural part of the fabric of my life. To this day I try once each year to visit this dear old field, even though it is long since leveled. All the sweep of my childhood comes back to me unbidden. The field is still a pasture, but generations of cows have passed on since then. Yet, as much as this field meant to me, I do not remember to have had any distinct feeling that there was any cause for the pools and knolls. My father cut the field from the forest, yet I do not remember that I ever asked him why this field was so; and I never heard any person express any curiosity about it. We all seemed to have

accepted it, just as we accept the air. As I think of it now, this field must have been the path of a tornado that turned over the trees; and long before the settlers came, the prostrate trunks had decayed and a second forest had grown. Would that I could have known that simple explanation! One sentence would have given me the clew. How the mystery of the ancient tornado and the rise of another forest would have conjured a new world of marvel and discovery.

When I had written this sketch of my pasture field, I called in a little school girl and read it to her. I wanted to hear her estimate of it, — for children are the best critics and also honest ones.

“That’s a nice story,” she said; “but I don’t want to study such things in school.”

“And why not?” I asked.

“Because they are hard and dry,” she said.

Poor child! She was thinking of her books; and to think that I also had written books!

I would preach the sky. When in the open country we are impressed most with the sense of room and with the sky. City persons have no sky, but only fragments of a leaky roof; for the city is one structure and needs only a roof to make it a single building. They have no free horizon line — no including circle laid on the earth, no welkin. There are no clouds, — only an undefined something that portends rain or hides the sun. One must have free vision if he is to know the sky. He must see the clouds sweep across the firmament, changing and dissolving as they go. He must look deep into the zenith, beyond the highest cirrus. We have almost lost the habit of looking up:

Look unto the heavens, and see;

And behold the skies, which are higher than thou.

Or, if we note the sky, it is chiefly a mid-day or sunset recognition. Our literature is rich in sunsets, but poorer in sunrises.

Civilization has led us away from the morning, and at the same time it has led us away from youthfulness. We have telescoped the day far into the night, and morning is becoming obsolete. We are owls. I know that this cannot be helped; but it can be mentioned. I have asked person after person whether he ever saw the sun rise. The large number have said no; and most of those who had seen the sun rise had seen it against their will and remembered it with a sense of weariness. Here, again, our farm boy has the advantage: he leads something like a natural life. I doubt whether a man can be a poet if he has not known the sunrise.

The sky is the one part of the environment that is beyond our reach. We cannot change it; we cannot spoil it; we cannot paint signs on it. The sky is forever new and young; the seasons come out of it; the winds blow out of it; the weather is born from it:

Hast thou entered the treasures of the snow,
Or hast thou seen the treasures of the hail?

I preach the mountains, and everything that is taller than a man. Yet it is to be feared that many persons see too many mountains and too many great landscapes, and that the "seeing" of nature becomes a business as redundant and wearisome as other affairs. One who lives on the mountains does not know how high they are. Let us have one inspiration that lifts us clear of ourselves: this is better than to see so many mountains that we remember only their names. The best objects that you can see are those in your own realm; but your own realm becomes larger and means more for the sight of something beyond.

It is worth while to cherish the few objects and phenomena that have impressed us greatly, and it is well to recount them often, until they become part of our being. One such phenomenon stands out boldly in my own experience. It was the sight of sunrise on Mt. Shasta, seen from the southeastern

side from a point that was wholly untouched by travelers. From this point only the main dome of the mountain is seen. I had left the Southern Pacific train at Sisson's and had ridden on a flat-car over a lumber railroad some eighteen miles to the southeast. From this destination, I drove far into the great forest, over old lava dust that floated through the woods like smoke as it was stirred up by our horses and wagon-wheels. I was a guest for the night in one of those luxurious lodges which true nature-lovers, wishing wholly to escape the affairs of cities, build in remote and inaccessible places. The lodge stood on a low promontory, around three sides of which a deep swift mountain stream ran in wild tumult. Giant shafts of trees, such shafts as one sees only in the stupendous forests of the far West, shot straight into the sky from the very cornices of the house. It is always a marvel to the easterner how shafts of such extraordinary height could have been nourished by the very thin and narrow crowns that they bear. One always wonders, also, at the great distance the sap-water must carry its freight of mineral from root to leaf and its heavier freight from leaf to root.

We were up before the dawn. We made a pot of coffee, and the horses were ready, — fine mounts, accustomed to woods trails and hard slopes. It was hardly light enough to enable us to pick our way. We were as two pigmies, so titanic was the forest. The trails led us up and up, under spruce boughs becoming fragrant, over needle-strewn floors still heavy with darkness, disclosing glimpses now and then of gray light showing eastward between the boles. Suddenly the forest stopped, and we found ourselves on the crest of a great ridge: and sheer before us stood the great cone of Shasta, cold and gray and silent, floating on a sea of darkness from which even the highest tree crowns did not emerge. Scarcely had we spoken in the miles of our ascent, and now words would be sacrilege. Almost automatically we dismounted, letting the reins fall over the horses' necks, and

removed our hats. The horses stood, and dropped their heads. Uncovered, we sat ourselves on the dry leaves and waited. It was the morning of creation. Out of the pure stuff of nebulae the cone had just been shaped and flung adrift until a world should be created on which it might rest. The gray light grew into the mountain. Gradually a ruddy light appeared in the east. Then a flash of red shot out of the horizon, struck on a point of the summit, and caught from crag to crag and snow to snow until the great mass was streaked and splashed with fire. Slowly the darkness settled away from its base; a tree emerged, a bird chirped, and the morning was born!

Now a great nether world began to rise up out of Chaos. Far hills rose first through rolling billows of mist. Then came wide forests of spruce. As the panorama rose, the mountain changed from red to gold. The stars had faded out and left the great mass to itself on the bosom of the rising world, — the mountain fully created now and established. Spriggy bushes and little leaves — little green-brown leaves and tender tufts of herbs — trembled out of the woods. The illimitable circle of the world stretched away and away, its edges still hung in the stuff from which it had just been fashioned. Then the forest rang with calls of birds and a hundred joyous noises, and the creation was complete.

I have now reviewed some of the characteristics of the sympathetic attitude toward nature, and have tried to show how this outlook means greater efficiency, hopefulness, and repose. In the subsequent lectures I shall enlarge on its bearings on certain practical and very essential affairs. I have no mind to be iconoclast, to try to tear down what has been built, or to advise any man to change his occupation or profession. That would be impossible to accomplish, even were it desirable to advise. But even in the midst of all our eagerness and involvedness, it is still possible to open the mind toward nature, and it will sweeten and strengthen our

lives. Nature is our environment, and we cannot escape it if we would. The problem of our life is not yonder; it is here. The seeking of truth in fresh fields and for the love of it is akin to the enthusiasm of youth. Men keep young by knowing nature. They also should keep true. One of the New Sayings of Jesus is this: "Raise the stone, and there thou shalt find me; cleave the wood, and there am I."

A HERMIT'S NOTES ON THOREAU¹

PAUL ELMER MORE

NEAR the secluded village of Shelburne that lies along the peaceful valley of the Androscoggin, I took upon myself to live two years as a hermit after a mild Epicurean fashion of my own. Three maiden aunts wagged their heads ominously; my nearest friend inquired cautiously whether there was any taint of insanity in the family; an old gray-haired lady, a veritable saint who had not been soured by her many deeds of charity, admonished me on the utter selfishness and godlessness of such a proceeding. But I clung heroically to my resolution. Summer tourists in that pleasant valley may still see the little red house among the pines, — empty now, I believe; and I dare say gaudy coaches still draw up at the door, as they used to do, when the gaudier bonnets and hats exchanged wondering remarks on the cabalistic inscription over the lintel, or spoke condescendingly to the great dog lying on the steps. As for the hermit within, having found it impossible to educe any meaning from the tangled habits of mankind while he himself was whirled about in the imbroglio, he had determined to try the efficacy of undisturbed meditation at a distance. So deficient had been his education that he was actually better acquainted with the aspirations and emotions of the old dwellers on the Ganges than with those of the modern toilers by the Hudson or the Potomac. He had been deafened by the “indistinguishable roar” of the streets, and could make no sense of the noisy jargon of the

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market place. But — shall it be confessed? — although he discovered many things during his contemplative sojourn in the wilderness, and learned that the attempt to criticise and not to create literature was to be his labor in this world, nevertheless he returned to civilization as ignorant, alas, of its meaning as when he left it.

However, it is not my intention to justify the saintly old lady's charge of egotism by telling the story of my exodus to the desert; that, perhaps, may come later and at a more suitable time. I wish now only to record the memories of one perfect day in June, when woods and mountains were as yet a new delight.

The fresh odors of morning were still swaying in the air when I set out on this particular day; and my steps turned instinctively to the great pine forest, called the Cathedral Woods, that filled the valley and climbed the hill slopes behind my house. There, many long roads that are laid down in no map wind hither and thither among the trees, whose leafless trunks tower into the sky and then meet in evergreen arches overhead. There,

The tumult of the times disconsolate

never enters, and no noise of the world is heard save now and then, in winter, the ringing strokes of the woodchopper at his cruel task. How many times I have walked those quiet cathedral aisles, while my great dog paced faithfully on before! Underfoot the dry, purple-hued moss was stretched like a royal carpet; and at intervals a glimpse of the deep sky, caught through an aperture in the groined roof, reminded me of the other world, and carried my thoughts still farther from the desolating memories of this life. Nothing but pure odors were there, sweeter than cloistral incense; and murmurous voices of the pines, more harmonious than the chanting of trained choristers; and in the heart of the wanderer nothing but tranquillity and passionless peace.

Often now the recollection of those scenes comes floating back upon his senses when, in the wakeful seasons of a summer night, he hears the wind at work among the trees; even in barren city streets some sound or spectacle can act upon him as a spell, banishing for a moment the hideous contention of commerce, and placing him beneath the restful shadows of the pines. May his understanding cease its function, and his heart forget to feel, when the memory of those days has utterly left him and he walks in the world without this consolation of remembered peace.

Nor can I recollect that my mind, in these walks, was much called away from contemplation by the petty curiosities of the herbalist or bird-lorist, for I am not one zealously addicted to scrutinizing into the minuter secrets of Nature. It never seemed to me that a flower was made sweeter by knowing the construction of its ovaries, or assumed a new importance when I learned its trivial or scientific name. The wood thrush and the veery sing as melodiously to the uninformed as to the subtly curious. Indeed, I sometimes think a little ignorance is wholesome in our communion with Nature, until we are ready to part with her altogether. She is feminine in this as in other respects, and loves to shroud herself in illusions, as the Hindus taught in their books. For they called her *Mâyâ*, the very person and power of deception, whose sway over the beholder must end as soon as her mystery is penetrated.

Dear as the sound of the wood thrush's note still is to my ears, something of charm and allurements has gone from it since I have become intimate with the name and habits of the bird. As a child born and reared in the city, that wild, ringing call was perfectly new and strange to me when, one early dawn, I first heard it during a visit to the Delaware Water Gap. To me, whose ears had grown familiar only with the rumble of paved streets, the sound was like a reiterated unearthly summons inviting me from my narrow prison existence

out into a wide and unexplored world of impulse and adventure. Long afterwards I learned the name of the songster whose note had made so strong an impression upon my childish senses, but still I associate the song with the grandiose scenery, with the sheer forests and streams and the rapid river of the Water Gap. I was indeed almost a man — though the confession may sound incredible in these days — before I again heard the wood thrush's note, and my second adventure impressed me almost as profoundly as the first. In the outer suburbs of the city where my home had always been, I was walking one day with a brother, when suddenly out of a grove of laurel oaks sounded, clear and triumphant, the note which I remembered so well, but which had come to have to my imagination the unreality and mystery of a dream of long ago. Instantly my heart leapt within me. "It is the fateful summons once more!" I cried; and, with my companion who was equally ignorant of bird-lore, I ran into the grove to discover the wild trumpeter. That was a strange chase in the fading twilight, while the unknown songster led us on from tree to tree, ever deeper into the woods. Many times we saw him on one of the lower boughs, but could not for a long while bring ourselves to believe that so wondrous a melody should proceed from so plain a minstrel. And at last, when we had satisfied ourselves of his identity, and the night had fallen, we came out into the road with a strange solemnity hanging over us. Our ears had been opened to the unceasing harmonies of creation, and our eyes had been made aware of the endless drama of natural life. We had been initiated into the lesser mysteries; and if the sacred pageantry was not then, and never was to be, perfectly clear to our understanding, the imagination was nevertheless awed and purified.

If the knowledge and experience of years have made me a little more callous to these deeper influences, at least I have not deliberately closed the door to them by incautious prying.

Perhaps a long course of wayward reading has taught me to look upon the world with eyes quite different from those of the modern exquisite searchers into Nature. I remember the story of Prometheus, and think his punishment is typical of the penalty that falls upon those who grasp at powers and knowledge not intended for mankind, — some nemesis of a more material loneliness and a more barren pride torturing them because they have turned from human knowledge to an alien and forbidden sphere. Like Prometheus, they shall in the end cry out in vain:

O air divine, and O swift-winged winds!
Ye river fountains, and thou myriad-twinkling
Laughter of ocean waves! O mother earth!
And thou, O all-discerning orb o' the sun! —
To you, I cry to you; behold what I,
A god, endure of evil from the gods.

Nor is the tale of Prometheus alone in teaching this lesson of prudence, nor was Greece the only land of antiquity where reverence was deemed more salutary than curiosity. The myth of the veiled Isis passed in those days from people to people, and was everywhere received as a symbol of the veil of illusion about Nature, which no man might lift with impunity. And the same idea was, if anything, intensified in the Middle Ages. The common people, and the Church as well, looked with horror on such scholars as Pope Gerbert, who was thought, for his knowledge of Nature, to have sold himself to the devil; and on such discoverers as Roger Bacon, whose wicked searching into forbidden things cost him fourteen years in prison. And even in modern times did not the poet Blake say: "I fear Wordsworth loves nature, and nature is the work of the Devil. The Devil is in us as far as we are nature"? It has remained for an age of scepticism to substitute investigation for awe. After all, can any course of study or open-air pedagogics bring us into real communion with the world about us? I fear much of the talk about

companionship with Nature that pervades our summer life is little better than cant and self-deception, and he best understands the veiled goddess who most frankly admits her impenetrable secrecy. The peace that comes to us from contemplating the vast panorama spread out before us is due rather to the sense of a great passionless power entirely out of our domain than to any real intimacy with the hidden deity. It was John Woolman, the famous New Jersey Quaker, who wrote, during a journey through the wilderness of Pennsylvania: "In my traveling on the road, I often felt a cry rise from the center of my mind, thus, 'O Lord, I am a stranger on the earth, hide not thy face from me.'"

But I forget that I am myself traveling on the road; and all this long disquisition is only a chapter of reminiscences, due to the multitudinous singing of the thrushes on this side and that, as we — I and my great dog — trod the high cathedral aisles. After a while the sound of running water came to us above the deeper diapason of the pines, and, turning aside, we clambered down to a brook which we had already learned to make the terminus of our walks. Along this stream we had discovered a dozen secret nooks where man and dog might lie or sit at ease, and to-day I stretched myself on a cool, hollow rock, with my eyes looking up the long, leafy chasm of the brook. Just above my couch the current was dammed by a row of mossy boulders, over which the waters poured with a continual murmur and splash. My head was only a little higher than the pool beyond the boulders, and, lying motionless, I watched the flies weaving a pattern over the surface of the quiet water, and now and then was rewarded by seeing a greedy trout leap into the sunlight to capture one of the winged weavers. Surely, if there is any such thing as real intimacy with Nature, it is in just such secluded spots as this; for the grander scenes require of us a moral enthusiasm which can come to the soul only at rare intervals and for brief moments. From these chosen moun-

tain retreats, one might send to a scientist, busy with his books and his instruments and curious to pry into the secret powers of Nature, some such appeal as this :—

Brother, awhile your impious engines leave;
Nor always seek with flame-compelling wires
Out of the palsied hand of Zeus to reave
His dear celestial fires.

What though he drowse upon a tottering bench,
Forgetful how his random bolts are hurled!
Are you to blame? or is it yours to quench
The thunders of the world?

Come learn with me through folly to be wise:
Think you by cunning laws of optic lore
To lend the enamelled fields or burning skies
One splendour lacked before?

A wizard footrule to the waves of sound
You lay, — hath measure in the song of bird
Or ever in the voice of waters found
One melody erst unheard?

Ah, for a season close your magic books,
Your rods and crystals in the closet hide;
I know in covert ways a hundred nooks,
High on the mountain side,

Where through the golden hours that follow noon,
Under the greenwood shadows you and I
May talk of happy lives, until too soon
Night's shadows fold the sky.

And while like incense blown among the leaves
Our fragrant smoke ascends from carven bowl,
We'll con the lesser wisdom that deceives
The Questioner in the soul,

And laugh to hoodwink where we cannot rout :—
Did Bruno of the stubborn heart outbrave,
Or could the mind of Galileo flout
The folly of the Grave?

So it seemed to me that the lesser wisdom of quiet content before the face of Nature's mysteries might be studied in the untrained garden of my hermitage. But I have been dreaming and moralizing on the little life about me and the greater life of the world too long. So lying near the level of the still pool I began to read. The volume chosen was the most appropriate to the time and place that could be imagined, — Thoreau's *Walden*; and having entered upon an experiment not altogether unlike his, I now set myself to reading the record of his two years of solitude. I learned many things from that morning's perusal. Several times I had read the *Odyssey* within sight of the sea; and the murmur of the waves on the beach, beating through the rhythm of the poem, had taught me how vital a thing a book might be, and how it could acquire a peculiar validity from harmonious surroundings; but now the reading of Thoreau in that charmed and lonely spot emphasized this commonplace truth in a special manner. *Walden* studied in the closet, and *Walden* mused over under the trees, by running water, are two quite different books. And then, from Thoreau, the greatest by far of our writers on Nature, and the creator of a new sentiment in literature, my mind turned to the long list of Americans who have left, or are still composing, a worthy record of their love and appreciation of the natural world. Our land of multiform activities has produced so little that is really creative in literature or art! Hawthorne and Poe, and possibly one or two others, were masters in their own field; yet even they chose not quite the highest realm for their genius to work in. But in one subject our writers have led the way and are still preëminent: Thoreau was the creator of a new manner of writing about Nature. In its deeper essence his work is inimitable, as it is the voice of a unique personality; but in its superficial aspects it has been taken up by a host of living writers, who have caught something of his method, even if they lack his genius and singleness of

heart. From these it was an easy transition to compare Thoreau's attitude of mind with that of Wordsworth and the other great poets of his century who went to Nature for their inspiration, and made Nature-writing the characteristic note of modern verse. What is it in Thoreau that is not to be found in Byron and Shelley and Wordsworth, not to mention old Izaak Walton, Gilbert White of Selborne, and a host of others? It was a rare treat, as I lay in that leafy covert, to go over in memory the famous descriptive passages from these authors, and to contrast their spirit with that of the book in my hand.

As I considered these matters, it seemed to me that Thoreau's work was distinguished from that of his American predecessors and imitators by just these qualities of awe and wonder which we, in our communings with Nature, so often cast away. Mere description, though it may at times have a scientific value, is after all a very cheap form of literature; and, as I have already intimated, too much curiosity of detail is likely to exert a deadening influence on the philosophic and poetic contemplation of Nature. Such an influence is, as I believe, specially noticeable at the present time, and even Thoreau was not entirely free from its baneful effect. Much of his writing, perhaps the greater part, is the mere record of observation and classification, and has not the slightest claim on our remembrance, — unless, indeed, it possesses some scientific value, which I doubt. Certainly the parts of his work having permanent interest are just those chapters where he is less the minute observer, and more the contemplative philosopher. Despite the width and exactness of his information, he was far from having the truly scientific spirit; the acquisition of knowledge, with him, was in the end quite subordinate to his interest in the moral significance of Nature, and the words he read in her obscure scroll were a language of strange mysteries, oftentimes of awe. It is a constant reproach to the prying, self-satisfied

habits of small minds to see the reverence of this great-hearted observer before the supreme goddess he so loved and studied.

Much of this contemplative spirit of Thoreau is due to the soul of the man himself, to that personal force which no analysis of character can explain. But, besides this, it has always seemed to me that, more than in any other descriptive writer of the land, his mind is the natural outgrowth, and his essays the natural expression, of a feeling deep-rooted in the historical beginnings of New England; and this foundation in the past gives a strength and convincing force to his words that lesser writers utterly lack. Consider the new life of the Puritan colonists in the strange surroundings of their desert home. Consider the case of the adventurous Pilgrims sailing from the comfortable city of Leyden to the unknown wilderness over the sea. As Governor Bradford wrote, "the place they had thoughts on was some of those vast & unpeopled countries of America, which are frutfull & fitt for habitation, being devoyd of all civill inhabitants, wher ther are only salvage and brutish men, which range up and downe, little otherwise than ye wild beasts of the same." In these vast and unpeopled countries, where beast and bird were strange to the eye, and where "salvage" men abounded, — men who did not always make the land so "fitt" for new inhabitants as Bradford might have desired, — it was inevitable that the mind should be turned to explore and report on natural phenomena and on savage life. It is a fact that some of the descriptions of sea and land made by wanderers to Virginia and Massachusetts have a directness and graphic power, touched occasionally with an element of wildness, that render them even to-day agreeable reading.

This was before the time of Rousseau, and before Gray had discovered the beauty of wild mountain scenery; inevitably the early American writers were chiefly interested in Nature as the home of future colonists, and their books are

for the most part semi-scientific accounts of what they studied from a utilitarian point of view. But the dryness of detailed description in the *New World* was from the first modified and lighted up by the wondering awe of men set down in the midst of the strange and often threatening forces of an untried wilderness; and this sense of awful aloofness, which to a certain extent lay dormant in the earlier writers, did nevertheless sink deep into the heart of New England, and when, in the lapse of time, the country entered into its intellectual renaissance, and the genius came who was destined to give full expression to the thoughts of his people before the face of Nature, it was inevitable that his works should be dominated by just this sense of poetic mystery.

It is this *New World* inheritance, moreover, — joined, of course, with his own inexplicable personality, which must not be left out of account, — that makes Thoreau's attitude toward Nature something quite distinct from that of the great poets who just preceded him. There was in him none of the fiery spirit of the revolution which caused Byron to mingle hatred of men with enthusiasm for the Alpine solitudes. There was none of the passion for beauty and the voluptuous self-abandonment of Keats; these were not in the atmosphere he breathed at Concord. He was not touched with Shelley's unearthly mysticism, nor had he ever fed

on the ærial kisses
Of shapes that haunt thought's wildernesses;

his moral sinews were too stark and strong for that form of mental dissipation. Least of all did he, after the manner of Wordsworth, hear in the voice of Nature any compassionate plea for the weakness and sorrow of the downtrodden. Philanthropy and humanitarian sympathies were to him a desolation and a woe. "Philanthropy is almost the only virtue which is sufficiently appreciated by mankind. Nay, it is greatly overrated; and it is our selfishness which overrates

it," he writes. And again: "The philanthropist too often surrounds mankind with the remembrance of his own cast-off griefs as an atmosphere, and calls it sympathy." Similarly his reliance on the human will was too sturdy to be much perturbed by the inequalities and sufferings of mankind, and his faith in the individual was too unshaken to be led into humanitarian interest in the masses. "Alas! this is the crying sin of the age," he declares, "this want of faith in the prevalence of a man."

But the deepest and most essential difference is the lack of pantheistic reverie in Thoreau. It is this brooding over the universal spirit embodied in the material world which almost always marks the return of sympathy with Nature, and which is particularly noticeable in the writers of the past century. So Lord Byron, wracked and broken by his social catastrophes, turns for relief to the fair scenes of Lake Lemman, and finds in the high mountains and placid waters a consoling spirit akin to his own.

Are not the mountains, waves, and skies, a part
Of me and of my soul, as I of them?

he asks; and in the bitterness of his human disappointment he would "be alone, and love Earth only for its earthly sake." Shelley, too, "mixed awful talk" with the "great parent," and heard in her voice an answer to all his vague dreams of the soul of universal love. No one, so far as I know, has yet studied the relation between Wordsworth's pantheism and his humanitarian sympathies, but we need only glance at his lines on Tintern Abbey to see how closely the two feelings were interknit in his mind. It was because he felt this

sense sublime

Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean, and the living air,
And the blue sky, and in the mind of man;

it was because the distinctions of the human will and the consequent perception of individual responsibility were largely absorbed in this dream of the universal spirit, that he heard in Nature "the still, sad music of humanity," and reproduced it so sympathetically in his own song. Of all this pantheism, whether attended with revolt from responsibility or languid reverie or humanitarian dreams, there is hardly a trace in Thoreau. The memory of man's struggle with the primeval woods and fields was not so lost in antiquity that the world had grown into an indistinguishable part of human life. If Nature smiled upon Thoreau at times, she was still an alien creature who succumbed only to his force and tenderness, as she had before given her bounty, though reluctantly, to the Pilgrim Fathers. A certain companionship he had with the plants and wild beasts of the field, a certain intimacy with the dumb earth; but he did not seek to merge his personality in their impersonal life, or look to them for a response to his own inner moods; he associated with them as the soul associates with the body.

More characteristic is his sense of awe, even of dread, toward the great unsubdued forces of the world. The loneliness of the mountains such as they appeared to the early adventurers in a strange, unexplored country; the repellent loneliness of the barren heights frowning down inhospitably upon the pioneer who scratched the soil at their base; the loneliness and terror of the dark, untrodden forests, where the wanderer might stray away and be lost forever, where savage men were more feared than the wild animals, and where superstition saw the haunt of the Black Man and of all uncleanness, — all this tradition of sombre solitude made Nature to Thoreau something very different from the hills and valleys of Old England. "We have not seen pure Nature," he says, "unless we have seen her thus vast and drear and inhuman. . . . Man was not to be associated with it. It was matter, vast, terrific, — not his Mother Earth that

we have heard of, not for him to tread on, or be buried in, — no, it were being too familiar even to let his bones lie there, — the home, this, of Necessity and Fate.” After reading Byron’s invocation to the Alps as the palaces of Nature; or the ethereal mountain scenes in Shelley’s *Alastor*, where all the sternness of the everlasting hills is dissolved into rainbow hues of shifting light as dainty as the poet’s own soul; or Wordsworth’s familiar musings in the vale of Grasmere, — if, after these, we turn to Thoreau’s account of the ascent of Mount Katahdin, we seem at once to be in the home of another tradition. I am tempted to quote a few sentences of that account to emphasize the point. On the mountain heights, he says of the beholder:

He is more lone than you can imagine. There is less of substantial thought and fair understanding in him than in the plains where men inhabit. His reason is dispersed and shadowy, more thin and subtle, like the air. Vast, Titanic, inhuman Nature has got him at disadvantage, caught him alone, and pilfers him of some of his divine faculty. She does not smile on him as in the plains. She seems to say sternly, Why came ye here before your time? This ground is not prepared for you. Is it not enough that I smile in the valleys? I have never made this soil for thy feet, this air for thy breathing, these rocks for thy neighbors. I cannot pity nor fondle thee here, but forever relentlessly drive thee hence to where I *am* kind.

I do not mean to present the work of Thoreau as equal in value to the achievement of the great poets with whom I have compared him, but wish merely in this way to bring out more definitely his characteristic traits. Yet if his creative genius is less than theirs, I cannot but think his attitude toward Nature is in many respects truer and more wholesome. Pantheism, whether on the banks of the Ganges or of the Thames, seems to bring with it a spreading taint of effeminacy; and from this the mental attitude of our Concord naturalist was eminently free. There is something tonic and bracing in his intercourse with the rude forces of the forest; he went to Walden Pond because he had “private business to transact,”

not for relaxation and mystical reverie. "To be a philosopher," he said, "is not merely to have subtle thoughts, nor even to found a school, but so to love wisdom as to live according to its dictates, a life of simplicity, independence, magnanimity, and trust;" and by recurring to the solitudes of Nature he thought he could best develop in himself just these manly virtues. Nature was to him a discipline of the will as much as a stimulant to the imagination. He would, if it were possible, "combine the hardiness of the savages with the intellectualness of the civilized man;" and in this method of working out the philosophical life we see again the influence of long and deep-rooted tradition. To the first settlers, the red man was as much an object of curiosity and demanded as much study as the earth they came to cultivate; their books are full of graphic pictures of savage life, and it should seem as if now in Thoreau this inherited interest had received at last its ripest expression. When he travelled in the wilderness of Maine, he was as much absorbed in learning the habits of his Indian guides as in exploring the woods. He had some innate sympathy or perception which taught him to find relics of old Indian life where others would pass them by, and there is a well-known story of his answer to one who asked him where such relics could be discovered: he merely stooped down and picked an arrowhead from the ground.

And withal his stoic virtues never dulled his sense of awe, and his long years of observation never lessened his feeling of strangeness in the presence of solitary Nature. If at times his writing descends into the cataloguing style of the ordinary naturalist, yet the old tradition of wonder was too strong in him to be more than temporarily obscured. Unfortunately, his occasional faults have become in some of his recent imitators the staple of their talent: but Thoreau was pre-eminently the poet and philosopher of his school, and I cannot do better than close these desultory notes with the quotation of a passage which seems to me to convey most

vividly his sensitiveness to the solemn mystery of the deep forest:

We heard [he writes in his *Chesuncook*], come faintly echoing, or creeping from afar, through the moss-clad aisles, a dull, dry, rushing sound, with a solid core to it, yet as if half smothered under the grasp of the luxuriant and fungus-like forest, like the shutting of a door in some distant entry of the damp and shaggy wilderness. If we had not been there, no mortal had heard it. When we asked Joe [the Indian guide] in a whisper what it was, he answered, — "Tree fall."

ON THE ADVISABLENESS OF IMPROVING NATURAL KNOWLEDGE

THOMAS HENRY HUXLEY

THIS time two hundred years ago — in the beginning of January, 1666 — those of our forefathers who inhabited this great and ancient city took breath between the shocks of two fearful calamities: one not quite past, although its fury had abated; the other to come.

Within a few yards of the very spot on which we are assembled, so the tradition runs, that painful and deadly malady, the plague, appeared in the latter months of 1664; and, though no new visitor, smote the people of England, and especially of her capital, with a violence unknown before, in the course of the following year. The hand of a master has pictured what happened in those dismal months; and in that truest of fictions, *The History of the Plague Year*, Defoe shows death, with every accompaniment of pain and terror, stalking through the narrow streets of old London, and changing their busy hum into a silence broken only by the wailing of the mourners of fifty thousand dead; by the woful denunciations and mad prayers of fanatics; and by the madder yells of despairing profligates.

But, about this time in 1666, the death-rate had sunk to nearly its ordinary amount; a case of plague occurred only here and there, and the richer citizens who had flown from the pest had returned to their dwellings. The remnant of the people began to toil at the accustomed round of duty, or of pleasure; and the stream of city life bid fair to flow back along its old bed, with renewed and uninterrupted vigour.

The newly kindled hope was deceitful. The great plague, indeed, returned no more; but what it had done for the Londoners, the great fire, which broke out in the autumn of 1666, did for London; and, in September of that year, a heap of ashes and the indestructible energy of the people were all that remained of the glory of five-sixths of the city within the walls.

Our forefathers had their own ways of accounting for each of these calamities. They submitted to the plague in humility and in penitence, for they believed it to be the judgment of God. But, towards the fire they were furiously indignant, interpreting it as the effect of the malice of man, — as the work of the Republicans, or of the Papists, according as their prepossessions ran in favour of loyalty or of Puritanism.

It would, I fancy, have fared but ill with one who, standing where I now stand, in what was then a thickly peopled and fashionable part of London, should have broached to our ancestors the doctrine which I now propound to you — that all their hypotheses were alike wrong; that the plague was no more, in their sense, Divine judgment, than the fire was the work of any political, or of any religious sect; but that they were themselves the authors of both plague and fire, and that they must look to themselves to prevent the recurrence of calamities, to all appearance so peculiarly beyond the reach of human control — so evidently the result of the wrath of God, or of the craft and subtlety of an enemy.

And one may picture to one's self how harmoniously the holy cursing of the Puritan of that day would have chimed in with the unholy cursing and the crackling wit of the Rochesters and Sedleys, and with the revilings of the political fanatics, if my imaginary plain dealer had gone on to say that, if the return of such misfortunes were ever rendered impossible, it would not be in virtue of the victory of the faith of Laud, or of that of Milton; and, as little, by the triumph of republicanism, as by that of monarchy. But that the one thing needful

for compassing this end was, that the people of England should second the efforts of an insignificant corporation, the establishment of which, a few years before the epoch of the great plague and the great fire, had been as little noticed, as they were conspicuous.

Some twenty years before the outbreak of the plague a few calm and thoughtful students banded themselves together for the purpose, as they phrased it, of "improving natural knowledge." The ends they proposed to attain cannot be stated more clearly than in the words of one of the founders of the organization: —

Our business was (precluding matters of theology and state affairs) to discourse and consider of philosophical enquiries, and such as related thereunto: — as Physick, Anatomy, Geometry, Astronomy, Navigation, Staticks, Magneticks, Chymicks, Mechanicks, and Natural Experiments; with the state of these studies and their cultivation at home and abroad. We then discoursed of the circulation of the blood, the valves in the veins, the *venæ lacteæ*, the lymphatic vessels, the Copernican hypothesis, the nature of comets and new stars, the satellites of Jupiter, the oval shape (as it then appeared) of Saturn, the spots on the sun and its turning on its own axis, the inequalities and selenography of the moon, the several phases of Venus and Mercury, the improvement of telescopes and grinding of glasses for that purpose, the weight of air, the possibility or impossibility of vacuities and nature's abhorrence thereof, the Torricellian experiment in quicksilver, the descent of heavy bodies and the degree of acceleration therein, with divers other things of like nature, some of which were then but new discoveries, and others not so generally known and embraced as now they are; with other things appertaining to what hath been called the New Philosophy, which from the times of Galileo at Florence, and Sir Francis Bacon (Lord Verulam) in England, hath been much cultivated in Italy, France, Germany, and other parts abroad, as well as with us in England.

The learned Dr. Wallis, writing in 1696, narrates in these words, what happened half a century before, or about 1645. The associates met at Oxford, in the rooms of Dr. Wilkins, who was destined to become a bishop; and subsequently coming together in London, they attracted the notice of the king. And it is a strange evidence of the taste for knowledge

which the most obviously worthless of the Stuarts shared with his father and grandfather, that Charles the Second was not content with saying witty things about his philosophers, but did wise things with regard to them. For he not only bestowed upon them such attention as he could spare from his poodles and his mistresses, but, being in his usual state of impecuniosity, begged for them of the Duke of Ormond; and, that step being without effect, gave them Chelsea College, a charter, and a mace: crowning his favours in the best way they could be crowned, by burdening them no further with royal patronage or state interference.

Thus it was that the half-dozen young men, studious of the "New Philosophy," who met in one another's lodgings in Oxford or in London, in the middle of the seventeenth century, grew in numerical and in real strength, until, in its latter part, the "Royal Society for the Improvement of Natural Knowledge" had already become famous, and had acquired a claim upon the veneration of Englishmen, which it has ever since retained, as the principal focus of scientific activity in our islands, and the chief champion of the cause it was formed to support.

It was by the aid of the Royal Society that Newton published his *Principia*. If all the books in the world, except the *Philosophical Transactions*, were destroyed, it is safe to say that the foundations of physical science would remain unshaken, and that the vast intellectual progress of the last two centuries would be largely, though incompletely, recorded. Nor have any signs of halting or of decrepitude manifested themselves in our own times. As in Dr. Wallis's days, so in these, "our business is, precluding theology and state affairs, to discourse and consider of philosophical enquiries." But our "Mathematick" is one which Newton would have to go to school to learn; our "Statics, Mechanics, Magneticks, Chymicks, and Natural Experiments" constitute a mass of physical and chemical knowledge, a glimpse at which would

compensate Galileo for the doings of a score of inquisitorial cardinals; our "Physick" and "Anatomy" have embraced such infinite varieties of beings, have laid open such new worlds in time and space, have grappled, not unsuccessfully, with such complex problems, that the eyes of Vesalius and of Harvey might be dazzled by the sight of the tree that has grown out of their grain of mustard seed.

The fact is perhaps rather too much, than too little, forced upon one's notice, nowadays, that all this marvelous intellectual growth has a no less wonderful expression in practical life; and that, in this respect, if in no other, the movement symbolized by the progress of the Royal Society stands without a parallel in the history of mankind.

A series of volumes as bulky as the *Transactions of the Royal Society* might possibly be filled with the subtle speculations of the Schoolmen; not improbably, the obtaining a mastery over the products of mediæval thought might necessitate an even greater expenditure of time and of energy than the acquirement of the "New Philosophy"; but though such work engrossed the best intellects of Europe for a longer time than has elapsed since the great fire, its effects were "writ in water," so far as our social state is concerned.

On the other hand, if the noble first President of the Royal Society could revisit the upper air and once more gladden his eyes with a sight of the familiar mace, he would find himself in the midst of a material civilization more different from that of his day, than that of the seventeenth was from that of the first century. And if Lord Brouncker's native sagacity had not deserted his ghost, he would need no long reflection to discover that all these great ships, these railways, these telegraphs, these factories, these printing-presses, without which the whole fabric of modern English society would collapse into a mass of stagnant and starving pauperism, — that all these pillars of our State are but the ripples and the bubbles upon the surface of that great spiritual stream, the

springs of which only, he and his fellows were privileged to see; and seeing, to recognize as that which it behoved them above all things to keep pure and undefiled.

It may not be too great a flight of imagination to conceive our noble *revenant* not forgetful of the great troubles of his own day, and anxious to know how often London had been burned down since his time, and how often the plague had carried off its thousands. He would have to learn that, although London contains tenfold the inflammable matter that it did in 1666; though, not content with filling our rooms with woodwork and light draperies, we must needs lead inflammable and explosive gases into every corner of our streets and houses, we never allow even a street to burn down. And if he asked how this had come about, we should have to explain that the improvement of natural knowledge has furnished us with dozens of machines for throwing water upon fires, any one of which would have furnished the ingenious Mr. Hooke, the first "curator and experimenter" of the Royal Society, with ample materials for discourse before half a dozen meetings of that body; and that, to say truth, except for the progress of natural knowledge, we should not have been able to make even the tools by which these machines are constructed. And, further, it would be necessary to add, that although severe fires sometimes occur and inflict great damage, the loss is very generally compensated by societies, the operations of which have been rendered possible only by the progress of natural knowledge in the direction of mathematics, and the accumulation of wealth in virtue of other natural knowledge.

But the plague? My Lord Brouncker's observation would not, I fear, lead him to think that Englishmen of the nineteenth century are purer in life, or more fervent in religious faith, than the generation which could produce a Boyle, an Evelyn, and a Milton. He might find the mud of society at the bottom, instead of at the top, but I fear that the sum total

would be as deserving of swift judgment as at the time of the Restoration. And it would be our duty to explain once more, and this time not without shame, that we have no reason to believe that it is the improvement of our faith, nor that of our morals, which keeps the plague from our city; but, again, that it is the improvement of our natural knowledge.

We have learned that pestilences will only take up their abode among those who have prepared unswept and ungarnished residences for them. Their cities must have narrow, unwatered streets, foul with accumulated garbage. Their houses must be ill-drained, ill-lighted, ill-ventilated. Their subjects must be ill-washed, ill-fed, ill-clothed. The London of 1665 was such a city. The cities of the East, where plague has an enduring dwelling, are such cities. We, in later times, have learned somewhat of Nature, and partly obey her. Because of this partial improvement of our natural knowledge and of that fractional obedience, we have no plague; because that knowledge is still very imperfect and that obedience yet incomplete, typhoid is our companion and cholera our visitor. But it is not presumptuous to express the belief that, when our knowledge is more complete and our obedience the expression of our knowledge, London will count her centuries of freedom from typhoid and cholera, as she now gratefully reckons her two hundred years of ignorance of that plague which swooped upon her thrice in the first half of the seventeenth century.

Surely, there is nothing in these explanations which is not fully borne out by the facts? Surely, the principles involved in them are now admitted among the fixed beliefs of all thinking men? Surely, it is true that our countrymen are less subject to fire, famine, pestilence, and all the evils which result from a want of command over and due anticipation of the course of Nature, than were the countrymen of Milton; and health, wealth, and well-being are more abundant with us than with them? But no less certainly is the difference

due to the improvement of our knowledge of Nature, and the extent to which that improved knowledge has been incorporated with the household words of men, and has supplied the springs of their daily actions.

Granting for a moment, then, the truth of that which the depreciators of natural knowledge are so fond of urging, that its improvement can only add to the resources of our material civilization; admitting it to be possible that the founders of the Royal Society themselves looked for not other reward than this, I cannot confess that I was guilty of exaggeration when I hinted, that to him who had the gift of distinguishing between prominent events and important events, the origin of a combined effort on the part of mankind to improve natural knowledge might have loomed larger than the Plague and have outshone the glare of the Fire; as a something fraught with a wealth of beneficence to mankind, in comparison with which the damage done by those ghastly evils would shrink into insignificance.

It is very certain that for every victim slain by the plague, hundreds of mankind exist and find a fair share of happiness in the world by the aid of the spinning jenny. And the great fire, at its worst, could not have burned the supply of coal, the daily working of which, in the bowels of the earth, made possible by the steam pump, gives rise to an amount of wealth to which the millions lost in old London are but as an old song.

But spinning jenny and steam pump are, after all, but toys, possessing an accidental value; and natural knowledge creates multitudes of more subtle contrivances, the praises of which do not happen to be sung because they are not directly convertible into instruments for creating wealth. When I contemplate natural knowledge squandering such gifts among men, the only appropriate comparison I can find for her is to liken her to such a peasant woman as one sees in the Alps, striding ever upward, heavily burdened, and with mind bent only on her home; but yet without effort and

without thought, knitting for her children. Now stockings are good and comfortable things, and the children will undoubtedly be much the better for them; but surely it would be short-sighted, to say the least of it, to depreciate this toiling mother as a mere stocking-machine — a mere provider of physical comforts?

However, there are blind leaders of the blind, and not a few of them, who take this view of natural knowledge, and can see nothing in the bountiful mother of humanity but a sort of comfort-grinding machine. According to them, the improvement of natural knowledge always has been, and always must be, synonymous with no more than the improvement of the material resources and the increase of the gratifications of men.

Natural knowledge is, in their eyes, no real mother of mankind, bringing them up with kindness, and, if need be, with sternness, in the way they should go, and instructing them in all things needful for their welfare; but a sort of fairy god-mother, ready to furnish her pets with shoes of swiftness, swords of sharpness, and omnipotent Aladdin's lamps, so that they may have telegraphs to Saturn, and see the other side of the moon, and thank God they are better than their benighted ancestors.

If this talk were true, I, for one, should not greatly care to toil in the service of natural knowledge. I think I would just as soon be quietly chipping my own flint axe, after the manner of my forefathers a few thousand years back, as be troubled with the endless malady of thought which now infests us all, for such reward. But I venture to say that such views are contrary alike to reason and to fact. Those who discourse in such fashion seem to me to be so intent upon trying to see what is above Nature, or what is behind her, that they are blind to what stares them in the face in her.

I should not venture thus to speak strongly if my justification were not to be found in the simplest and most obvious

facts, — if it needed more than an appeal to the most notorious truths to justify my assertion, that the improvement of natural knowledge, whatever direction it has taken, and however low the aims of those who may have commenced it — has not only conferred practical benefits on men, but, in so doing, has effected a revolution in their conceptions of the universe and of themselves, and has profoundly altered their modes of thinking and their views of right and wrong. I say that natural knowledge, seeking to satisfy natural wants, has found the ideas which can alone still spiritual cravings. I say that natural knowledge, in desiring to ascertain the laws of comfort, has been driven to discover those of conduct, and to lay the foundations of a new morality.

Let us take these points separately; and first, what great ideas has natural knowledge introduced into men's minds?

I cannot but think that the foundations of all natural knowledge were laid when the reason of man first came face to face with the facts of Nature; when the savage first learned that the fingers of one hand are fewer than those of both; that it is shorter to cross a stream than to head it; that a stone stops where it is unless it be moved, and that it drops from the hand which lets it go; that light and heat come and go with the sun; that sticks burn away in a fire; that plants and animals grow and die; that if he struck his fellow savage a blow he would make him angry, and perhaps get a blow in return, while if he offered him a fruit he would please him, and perhaps receive a fish in exchange. When men had acquired this much knowledge, the outlines, rude though they were, of mathematics, of physics, of chemistry, of biology, of moral, economical, and political science, were sketched. Nor did the germ of religion fail when science began to bud. Listen to words which, though new, are yet three thousand years old: —

. . . When in heaven the stars about the moon
Look beautiful, when all the winds are laid,
And every height comes out, and jutting peak
And valley, and the immeasurable heavens
Break open to their highest, and all the stars
Shine, and the shepherd gladdens in his heart.

If the half-savage Greek could share our feelings thus far, it is irrational to doubt that he went further, to find as we do, that upon that brief gladness there follows a certain sorrow, — the little light of awakened human intelligence shines so mere a spark amidst the abyss of the unknown and unknowable; seems so insufficient to do more than illuminate the imperfections that cannot be remedied, the aspirations that cannot be realized, of man's own nature. But in this sadness, this consciousness of the limitation of man, this sense of an open secret which he cannot penetrate, lies the essence of all religion; and the attempt to embody it in the forms furnished by the intellect is the origin of the higher theologies.

Thus it seems impossible to imagine but that the foundations of all knowledge — secular or sacred — were laid when intelligence dawned, though the superstructure remained for long ages so slight and feeble as to be compatible with the existence of almost any general view respecting the mode of governance of the universe. No doubt, from the first, there were certain phenomena which, to the rudest mind, presented a constancy of occurrence, and suggested that a fixed order ruled, at any rate, among them. I doubt if the grossest of Fetish worshippers ever imagined that a stone must have a god within it to make it fall, or that a fruit had a god within it to make it taste sweet. With regard to such matters as these, it is hardly questionable that mankind from the first took strictly positive and scientific views.

But, with respect to all the less familiar occurrences which present themselves, uncultured man, no doubt, has always taken himself as the standard of comparison, as the centre

and measure of the world; nor could he well avoid doing so. And finding that his apparently uncaused will has a powerful effect in giving rise to many occurrences, he naturally enough ascribed other and greater events to other and greater volitions, and came to look upon the world and all that therein is, as the product of the volitions of persons like himself, but stronger, and capable of being appeased or angered, as he himself might be soothed or irritated. Through such conceptions of the plan and working of the universe all mankind have passed, or are passing. And we may now consider what has been the effect of the improvement of natural knowledge on the views of men who have reached this stage, and who have begun to cultivate natural knowledge with no desire but that of "increasing God's honour and bettering man's estate."

For example, what could seem wiser, from a mere material point of view, more innocent, from a theological one, to an ancient people, than that they should learn the exact succession of the seasons, as warnings for their husbandmen; or the position of the stars, as guides to their rude navigators? But what has grown out of this search for natural knowledge of so merely useful a character? You all know the reply. Astronomy, — which of all sciences has filled men's minds with general ideas of a character most foreign to their daily experience, and has, more than any other, rendered it impossible for them to accept the beliefs of their fathers. Astronomy, — which tells them that this so vast and seemingly solid earth is but an atom among atoms, whirling, no man knows whither, through illimitable space; which demonstrates that what we call the peaceful heaven above us, is but that space, filled by an infinitely subtle matter whose particles are seething and surging, like the waves of an angry sea; which opens up to us infinite regions where nothing is known, or ever seems to have been known, but matter and force, operating according to rigid rules; which leads us to contemplate

phenomena the very nature of which demonstrates that they must have had a beginning, and that they must have an end, but the very nature of which also proves that the beginning was, to our conceptions of time, infinitely remote, and that the end is as immeasurably distant.

But it is not alone those who pursue astronomy who ask for bread and receive ideas. What more harmless than the attempt to lift and distribute water by pumping it; what more absolutely and grossly utilitarian? Yet out of pumps grew the discussions about Nature's abhorrence of a vacuum; and then it was discovered that Nature does not abhor a vacuum, but that air has weight; and that notion paved the way for the doctrine that all matter has weight, and that the force which produces weight is co-extensive with the universe, — in short, to the theory of universal gravitation and endless force. While learning how to handle gases led to the discovery of oxygen, and to modern chemistry, and to the notion of the indestructibility of matter.

Again, what simpler, or more absolutely practical, than the attempt to keep the axle of a wheel from heating when the wheel turns round very fast? How useful for carters and gig drivers to know something about this; and how good were it, if any ingenious person would find out the cause of such phenomena, and thence educe a general remedy for them. Such an ingenious person was Count Rumford; and he and his successors have landed us in the theory of the persistence, or indestructibility, of force. And in the infinitely minute, as in the infinitely great, the seekers after natural knowledge of the kinds called physical and chemical, have everywhere found a definite order and succession of events which seem never to be infringed.

And how has it fared with "Physick" and Anatomy? Have the anatomist, the physiologist, or the physician, whose business it has been to devote themselves assiduously to that eminently practical and direct end, the alleviation of the

sufferings of mankind, — have they been able to confine their vision more absolutely to the strictly useful? I fear they are the worst offenders of all. For if the astronomer has set before us the infinite magnitude of space, and the practical eternity of the duration of the universe; if the physical and chemical philosophers have demonstrated the infinite minuteness of its constituent parts, and the practical eternity of matter and of force; and if both have alike proclaimed the universality of a definite and predicable order and succession of events, the workers in biology have not only accepted all these, but have added more startling theses of their own. For, as the astronomers discover in the earth no centre of the universe, but an eccentric speck, so the naturalists find man to be no centre of the living world, but one amidst endless modifications of life; and as the astronomers observe the mark of practically endless time set upon the arrangements of the solar system so the student of life finds the records of ancient forms of existence peopling the world for ages, which, in relation to human experience, are infinite.

Furthermore, the physiologist finds life to be as dependent for its manifestation of particular molecular arrangements as any physical or chemical phenomenon; and wherever he extends his researches, fixed order and unchanging causation reveal themselves, as plainly as in the rest of Nature.

Nor can I find that any other fate has awaited the germ of Religion. Arising, like all other kinds of knowledge, out of the action and interaction of man's mind, with that which is not man's mind, it has taken the intellectual coverings of Fetishism or Polytheism; of Theism or Atheism; of Superstition or Rationalism. With these, and their relative merits and demerits, I have nothing to do; but this it is needful for my purpose to say, that if the religion of the present differs from that of the past, it is because the theology of the present has become more scientific than that of the past; because it has not only renounced idols of wood and idols of stone, but

begins to see the necessity of breaking in pieces the idols built up of books and traditions and fine-spun ecclesiastical cobwebs: and of cherishing the noblest and most human of man's emotions, by worship "for the most part of the silent sort" at the Altar of the Unknown.

Such are a few of the new conceptions implanted in our minds by the improvement of natural knowledge. Men have acquired the ideas of the practically infinite extent of the universe and of its practical eternity; they are familiar with the conception that our earth is but an infinitesimal fragment of that part of the universe which can be seen; and that, nevertheless, its duration is, as compared with our standards of time, infinite. They have further acquired the idea that man is but one of innumerable forms of life now existing on the globe, and that the present existences are but the last of an immeasurable series of predecessors. Moreover, every step they have made in natural knowledge has tended to extend and rivet in their minds the conception of a definite order of the universe — which is embodied in what are called, by an unhappy metaphor, the laws of Nature — and to narrow the range and loosen the force of men's belief in spontaneity, or in changes other than such as arise out of that definite order itself.

Whether these ideas are well or ill founded is not the question. No one can deny that they exist, and have been the inevitable outgrowth of the improvement of natural knowledge. And if so, it cannot be doubted that they are changing the form of men's most cherished and most important convictions.

And as regards the second point — the extent to which the improvement of natural knowledge has remodelled and altered what may be termed the intellectual ethics of men, — what are among the moral convictions most fondly held by barbarous and semi-barbarous people?

They are the convictions that authority is the soundest basis of belief; that merit attaches to a readiness to believe;

that the doubting disposition is a bad one, and scepticism a sin; that when good authority has pronounced what is to be believed, and faith has accepted it, reason has no further duty. There are many excellent persons who yet hold by these principles, and it is not my present business, or intention, to discuss their views. All I wish to bring clearly before your minds is the unquestionable fact, that the improvement of natural knowledge is effected by methods which directly give the lie to all these convictions, and assume the exact reverse of each to be true.

The improver of natural knowledge absolutely refuses to acknowledge authority, as such. For him, scepticism is the highest of duties; blind faith the one unpardonable sin. And it cannot be otherwise, for every great advance in natural knowledge has involved the absolute rejection of authority, the cherishing of the keenest scepticism, the annihilation of the spirit of blind faith; and the most ardent votary of science holds his firmest convictions, not because the men he most venerates hold them; not because their verity is testified by portents and wonders; but because his experience teaches him that whenever he chooses to bring these convictions into contact with their primary source, Nature — whenever he thinks fit to test them by appealing to experiment and to observation — Nature will confirm them. The man of science has learned to believe in justification, not by faith, but by verification.

Thus, without for a moment pretending to despise the practical results of the improvement of natural knowledge, and its beneficial influence on material civilization, it must, I think, be admitted that the great ideas, some of which I have indicated, and the ethical spirit which I have endeavoured to sketch, in the few moments which remained at my disposal, constitute the real and permanent significance of natural knowledge.

If these ideas be destined, as I believe they are, to be more

and more firmly established as the world grows older; if that spirit be fated, as I believe it is, to extend itself into all departments of human thought, and to become coëxtensive with the range of knowledge; if, as our race approaches its maturity, it discovers, as I believe it will, that there is but one kind of knowledge and but one method of acquiring it; then we, who are still children, may justly feel it our highest duty to recognize the advisableness of improving natural knowledge, and so to aid ourselves and our successors in our course towards the noble goal which lies before mankind.

SCIENCE¹

(1857-1907)

HENRY S. PRITCHETT

THE progress of science — like human progress in all directions — is a somewhat irregular process. In this process we can generally distinguish several stages, which, however, merge constantly into one another. The first stage is that of the collection of scientific data; the next, some sort of logical arrangement of the data; and finally, generalizations made in the effort to interpret the phenomena. This chronological arrangement, however, is subject to constant variations. The human mind is active in the construction of theories formed far in advance of positive knowledge; and while such theories are often erroneous, they nevertheless serve to stimulate investigation and to lead ultimately to truth. Scientific progress is thus made up of a continuous series of collections of fact, while efforts at interpretation occur, not in their chronologic order, but rather in the order which the temperaments of men and the tendencies of the age may suggest.

For this reason it is seldom possible to compare sharply the state of science at two distinct epochs. There are, to be sure, discoveries which belong to a given year, but they are ordinarily the culmination of long periods of collection and comparison of facts, which represent rather processes than distinct efforts, and the men who contribute most to the collection and correlation of facts are often unknown to the public.

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Furthermore, it is to be remembered when one considers physical science that the facts and the phenomena of science are the same to-day as fifty years ago. Chemical reactions, the nature and growth of microbe organisms, the transformations of energy, are the same in nature to-day as they were a half-century ago. For this reason, the state of science at two distinct epochs cannot be contrasted in the same way as one might compare two epochs in a creative art, such as literature, in which a whole new school of authors may have grown up in consequence of a new social factor or a new literary cult.

Comparisons of scientific progress at two distinct epochs resemble rather two views from a mountain, one view-point a little higher than the other, each looking out upon the same topography, but showing hills and valleys and streams in greater detail or with greater clearness from one point than from the other by reason of the difference in altitude. In some such way one may compare the outlook in science to-day with that of a half-century ago; the facts and the phenomena are the same, the point of view has changed enormously.

To bring such a view within the compass of a brief discussion, one needs also to keep in mind two other facts. First, that in making such a comparison, one is viewing the scientific horizon, not from the standpoint of the specialist in any department of science, but rather from the standpoint of the educated American. Such a man is not interested in the minute subdivisions of science, nor in the names of the specialists who have served it; but rather in the outcome, in the direction both of utilitarian ends and of intellectual and moral results, which the progress of science promises to the race. Second, in making such a comparison from the standpoint of the general reader, it is most important to keep in view the unity of human knowledge. Science is essentially one, and while, for the sake of convenience, it must be classified into numerous subdivisions, these parts have a relation

to the whole. Thus, physical science not only concerns itself with the objective world, but it goes far beyond this and works at the relation between human circumstances and the necessary laws which govern physical objects. In the same way, the historical sciences transcend the social phenomena with which they are immediately concerned and attempt an interpretation of these in the light of physical law. Thus all divisions of science are inextricably yoked together in the common effort to explain the history of man, and the adjustment of the human race to its environment.

When one considers science in this larger aspect he realizes that the middle of the nineteenth century and the beginning of the twentieth are two extremely interesting epochs to compare. After centuries of accumulation of facts, the men of the first half of the nineteenth century had begun those great generalizations which the mid-century saw securely in the grasp of the human mind, and the fifty years which have since elapsed have borne a rich fruitage of those generalizations.

The fundamental contrasts which stand out most prominently in such a comparison may be grouped under four heads: —

1. The last fifty years have seen a great betterment of the theoretical basis of physical science.
2. This development has been marked by a notable stimulation of scientific research; a differentiation of scientific effort, and the creation thereby of a great number of special sciences or departments of science.
3. The possession of a secure theoretical basis and the intellectual quickening which has followed it have resulted in the application of science to the arts and to the industries in such measure as the world has never before known. These applications have to do with the comfort, health, pleasures, and happiness of the human race, and affect vitally all the conditions of modern life.

4. Last, but perhaps in many respects the most significant of all, is the effect which has been produced upon the religious faith and the philosophy of life of the civilized world by the widespread introduction of what may be called the modern scientific spirit.

I shall endeavor to point out the more significant movements which group themselves under these four heads, begging the reader always to bear in mind the fundamental facts to which I have alluded, that is to say, the desire to present a view, not of the scientific specialist, but of the educated intelligent American; and secondly, to keep in mind at the same time, notwithstanding the differentiations of science, the essential unity of human knowledge.

The Betterment of the Theoretical Basis of Physical Science

The fundamental sciences which have opened to us such knowledge of the laws of the universe as we now possess are mathematics, chemistry, and physics. The first of these deals with numerical relations, and it has been the tool with which the human mind has had most experience. It had advanced to a high stage of perfection long before any other branch of science had attained even respectable standing. Men learned to reason in abstract relations with great skill and proficiency long in advance of the time when they reasoned from physical phenomena to their cause. The end of the eighteenth century and the beginning of the nineteenth saw a galaxy of astronomers and mathematicians of whom Laplace and Gauss were the most fruitful, who carried mathematical treatment of the problems of astronomy and geodesy to a point which left little to be desired. The last century has seen little improvement in these processes, but mathematics has remained the most facile tool in the hands of the physical investigator, in the interpretation of physical phenomena, and in the expression of the transformations of energy. But for the significant progress which has been

made in the last fifty years we are indebted to the other two fundamental sciences, chemistry and physics. The first deals with the composition and transformation of matter; the second with energy and the transformation of energy.

The connection between physics and chemistry is so intimate that it is impossible to draw a line of separation. In general, we are concerned in chemistry with the elements which, by their combination, form various substances, and with the composition of these substances; while in physics we are concerned with matter as a mass, as a substance representing a fixed composition, though subject to changes of form and of place. Changes by which the identity of the body is affected, such as, for example, when hydrogen and oxygen combine to form water, are chemical changes and do not belong to physics; while changes which matter undergoes without altering its composition or destroying the identity of the body are physical and are part of the study of physics. Inasmuch, however, as chemical changes are accompanied by changes of energy, there is a broad region which belongs to the investigations both of the physicist and of the chemist, and which completely connects those two fundamental sciences.

In the early part of the nineteenth century, John Dalton announced his famous atomic theory, which has served to unify the known or suspected laws of chemical combination. Dalton discovered that to every element a definite number could be assigned, and that these numbers, or their multiples, govern the formation of all compounds. Oxygen, for instance, unites with other elements in the proportion of eight parts of weight, or some multiple thereof, and never in other ratios. With the help of these atomic weights — or combining parts, as they are sometimes called — the composition of any substance could be represented by a simple formula. This theory had become well established by the middle of the nineteenth century as the thread upon which all chemical results hung, and the second half of the century began under the stimulation

which this discovery brought about. Before this period, inorganic chemistry — that is, the chemistry of the metals, of earths, of common oxides, bases, and salts — had received the greatest attention, and during the first half of the nineteenth century inorganic chemistry embraced almost all the work of chemists. The second half of the nineteenth century has been the day of organic chemistry. It was at first supposed that the two fields of research were absolutely distinct, but this belief was overthrown by Woehler, who showed that urea, an organic body, was easily prepared from inorganic materials, and since that day a vast number of organic syntheses have been effected. Out of this study has grown the basis of the chemical theory of to-day, that is to say, the conception of chemical structure, which has placed the chemistry of the twentieth century upon a theoretical foundation vastly more secure and vastly more significant than that of half a century ago.

Briefly stated, this theory of chemical structure is as follows: Every atom, so far as its union with other atoms is concerned, is seen to have a certain atom-fixing power, which is known as its valence. For example, take hydrogen as the standard of reference, and consider some of its simplest compounds. In hydrochloric acid, one atom of hydrogen is added to one of chlorine. These elementary atoms combine only in the ratio of one to one. They are called "univalent," that is, their power of fixing or uniting with other atoms is unity. In water, on the other hand, a single oxygen atom holds two of hydrogen in combination, and so oxygen is called a bivalent element. Nitrogen, phosphorus, and other elements go still farther and are trivalent, while carbon is a quadrivalent substance, forming, therefore, compounds of the most complex type. The theory as thus stated is no mere speculation. It is the statement of observed fact, and this shows that the atoms unite, not at haphazard, but according to certain rules.

A notable advance took place in the years 1860 to 1870 in

the discovery of a general law connecting all the chemical elements. That those elements are related was early recognized, but it was not until the epoch-making work of Mendeléeff that the periodic variation in their properties was recognized, and the connection between the valency of the atom and its properties and compounds was interpreted.

Within twenty years chemistry has been enormously developed upon its electrical side, both theoretically and practically. From a purely chemical point of view, probably the most important electrical phenomena are those of electrolysis. When a current of electricity passes through a compound solution, the latter undergoes decomposition, and the dissolved substance is separated into two parts which move with unequal velocities in opposite directions. The conducting liquid is called an electrolyte, and the separated parts, or particles, of the compound in solution are termed its ions. One ion is positively, the other negatively, electrified, and hence they tend to accumulate around the opposite poles. Under suitable conditions, the separation can be made permanent, and this fact is of the greatest significance in the different processes of electrometallurgy.

The modern science of physics has its basis in the doctrine of the conservation of energy. This doctrine as stated in the words of Maxwell is, "The total energy of any material system is a quantity which can neither be increased nor diminished by any action between the parts of the system, though it may be transformed into any of the forms of which energy is susceptible." A little more than a half-century ago, our knowledge of physics consisted in the main of a large mass of facts loosely tied together by theories not always consistent. Between 1845 and 1850 the labors of Mayer, Joule, Helmholtz, and Sir William Thomson had placed the theory of the conservation of energy upon firm ground, and for the last half-century it has been the basic law for testing the accuracy of physical experiments and for extending phys-

ical theory. To the presence of such a highly defined and consistent theory is due the great development which our generation has witnessed.

The most remarkable development of the half-century in the domain of physics has gone on in that field included under the name radio-activity, a development which bids fair to affect the whole theory of physical processes. By radiation is meant the propagation of energy in straight lines. This is effected by vibrations in the ether which fills all space, both molecular and inter-stellar. This theory is based upon the conception that the vibrations are due to oscillations of the ultimate particles of matter.

Experiments in vacuum tubes by various investigators led to a long series of most interesting results, culminating in the discovery by Roentgen in 1895 of the so-called X-rays. These rays have properties quite different from those of ordinary light. They are not deflected by a magnet and will penetrate glass, tin, aluminum, and in general metals of low atomic weight. In 1896, Becquerel discovered that uranium possessed the property of spontaneously emitting rays capable of passing through bodies opaque to ordinary light.

Shortly after the discovery of this property in uranium Madame and Professor Curie succeeded in separating from pitchblende two new substances of very high radio-activity, called radium and polonium, the latter named after her native land, Poland.

The radiations from these various substances are invisible to the eye, but act upon a photographic plate and discharge an electrified body. A very active substance like radium will cause phosphorescent substance to become luminous.

If a magnetic field is applied to a pencil of radium rays the rays are separated out into three kinds, much as light rays are sifted out by passing through a prism. One set of rays is bent to the left, another to the right, and the third set keeps on in the original direction.

The emission of the particles which deviate to the left and right appears to proceed from explosions in some of the atoms of these substances. It is estimated that two hundred thousand millions are expelled from one gram of radium bromide every second, yet the number of atoms in a gram is so enormous that this rate of emission may continue some years without an appreciable wasting of the mass of the substance.

The discovery of these substances with their remarkable properties has not only led to interesting applications of the most novel kind, but has stimulated the imagination of investigators, and given rise to various new explanations of cosmic phenomena. For example, it has been suggested that the internal heat of the earth may be kept up by the heat emitted from radium and other radio-active matter. All such theories are yet in the speculative stage. It may be said in general that, while the phenomena presented by the radio-active substances have caused physicists to revise physical theory in respect to molecular energy, nothing has been discovered which is inconsistent with the fundamental law of the conservation of energy.

Progress no less real has been made in those sciences which deal with the study of the human body and the human mind. Physiology, during the last half of the nineteenth century, has gained nearly all our present knowledge of the chemistry of digestion and secretion and of the mechanics of circulation, while psychology has advanced from a branch of philosophy to the position of a distinctive science.

From whatever point of view one regards human progress, he will be led to realize that one of the greatest achievements of the race is the work of the army of scholars and investigators to whom is due the betterment in these fifty years of the theoretical basis of these two fundamental physical sciences, a basis which is not only intellectually sound, but intellectually fruitful. The roll of these names — chemists, physicists,

biologists, inventors, investigators in all fields of human knowledge — is made up from all lands. It is a world's roll of honor in which not only individuals but nations have earned immortality. Of all the men whose names are here written, there are two whose work is so fundamental and far-reaching that the world is glad to accord to them a preëminence. These are the Frenchman, Louis Pasteur, and the Englishman, Charles Darwin.

*The Differentiation of Science and the Development of
Special Sciences*

Under the stimulus of the great fundamental theories which have tended to unify chemistry and physics, and also to direct attention to a vast field common to both and previously unexplored, a large number of special sciences, or divisions of science, have been developed. Once the law of chemical structure was ascertained and the possibilities were made evident which this law involved, and once the law of the conservation of energy was clear and the multiform transformations which might be made under such a law formulated, there was opened in every nook and corner of the physical universe the opportunity for new combinations and for new transformations. The result of this has been that in the last five decades physicists and chemists, having these threads in their hands as guides, have gone off into all sorts of by-paths. There has grown up through these excursions a great number of minor divisions of science, dependent on processes partly physical and partly chemical, but all related to one another and to the fundamental sciences of chemistry and physics.

By means of that wonderful instrument, the spectroscope, has arisen the combination of the old science of astronomy with physics, known as astro-physics. There have been interesting gains in the older astronomy during this period, such as the discoveries of the new satellites of Mars, of Jupiter,

and of Saturn, all by American astronomers; the discovery of some hundreds of asteroids with the unexpected form of some of their orbits; and the variation of the terrestrial latitude. All these discoveries are in the direction of the applications of gravitational astronomy upon the foundations laid by Newton, Laplace, and Gauss. The significant gains have come, however, in the new astronomy, which is really celestial physics, and are the outcome of the modern spectroscope and photographic plate. The motion of stars and nebulae in the line of sight, and discovery of invisible companions by the doubling of the lines of the spectrum, and above all, the determinations of the physical constitution of the distant suns and nebulae have thrown a great light not only upon cosmic evolution, but upon the probable history of our own planet. Perhaps no one result of the whole study is so significant as this: In the far-distant suns which shine upon us, as well as in our own sun, we find only those same elements which exist in our own soil and in our own atmosphere. Just as the law of the combination of chemical elements and of the conservation of energy points to a uniform physical law on our planet, so also the unity of material composition throughout the universe of stars seems to point with equal significance to a physical unity of the whole universe.

Early in the seventeenth century, certain "animalculæ," as they were called, became recognized as the simplest form of life; but the modern science of bacteriology dates from the epoch-making investigations of Pasteur and Koch, conducted within the last thirty-five years. One of the most important steps was the introduction by Koch of trustworthy methods for separating individual bacterial species. Since many distinct species are indistinguishable from one another by size and shape, it was obviously impossible by the older methods of study to separate one from the other. Koch suggested the use of solid materials as culture media, thereby representing the conditions so often seen when such organic

matter as bread becomes mouldy. He demonstrated that the addition of gelatin to the infusions employed for the successful cultivation of bacteria converted them into practically solid culture media without robbing them of any of their useful properties; and by the employment of such media it was possible to separate as pure cultures the individual species that one desired to analyze. The introduction of this method for the isolation and study of bacterial species in pure cultures constitutes perhaps the most important stimulus to the development of modern bacteriology.

The studies made by Pasteur upon fermentation and the souring of wine, and upon the maladies of silkworms, together with Koch's studies upon the infections of wounds, and the appropriate methods of analyzing them, were rich in suggestion to the workers in this new field. Two of the most important results have been in the application of these studies to the problems of the sanitary engineer and to the work of preventive medicine.

The drinking water of our cities is purified to-day by the process of natural sand filtration, by the septic tank process, etc. In these methods the living bacteria are the instruments by which the results are obtained. The sand grains in the filters serve only as objects to which the bacteria can attach themselves and multiply. By the normal life processes of the bacteria the polluting organic matter in the water is used up and inert material given off as a result.

But even more important than this work of sanitation is the contribution of bacteriology to preventive medicine. Early in the course of his work, Pasteur discovered that certain virulent pathogenic bacteria, when kept under certain conditions, gradually lost their disease-producing power, without their other life properties being disturbed. When injected into animals in this attenuated state, there resulted a mild, temporary, and modified form of infection, usually followed by recovery. With recovery the animal so treated was

immune from the activities of the fully virulent bacteria of the same species. The development of this fruitful idea has not only resulted in the saving of millions of money, but it has resulted as well in the prevention of human disease, the greatest triumph of modern science.

A study of the laws of physics and chemistry in relation to living plants and animals led in a similar way to the discovery that the processes of the entire race history are reflected in the processes of the growth of the embryo, a result which created the new science of embryology.

Similarly, in the studies of energy differentiations have gone on. Fifty years ago, our colleges had a single professor of what was called at that day natural philosophy. To-day, a modern college will divide this field among a corps of teachers and investigators, one devoting his attention to mechanics, another to heat, another to electricity, another to magnetism, and another to sound and light. In turn, electricity will be subdivided, the investigator concerning himself with a constantly narrowing field of phenomena, with the expectation of working out completely the problem whose solution is sought. All these departments of physical science, with their numerous sub-divisions, are the offspring of the fundamental sciences chemistry and physics. No contrast is more striking in comparing the science of to-day with that of fifty years ago than this differentiation, unless it be the even more significant fact that, notwithstanding this differentiation and division of labor, the essential unity of science is more apparent than ever before. Astronomy, geology, and biology were, fifty years ago, separate, and to a large extent unrelated, sciences. To-day they are seen to flourish in a common soil.

The Application of Science to the Arts and to the Industries

In no other way has the march of science in the last half-century been so evident to the eyes of the average intelligent man as in its practical applications to the arts and industries.

Modern life to-day is on a different plane from that of fifty years ago by reason of applied science alone. Whether this has added to the joy of living, and to the general happiness of mankind, is another question; but that it has raised the standard of health, that it has added enormously to the comfort and to the conveniences of man, no one can dispute. The house of fifty years ago lacked the facilities of pure water; it was illuminated, at the best, by imperfect gas jets; it was warmed by the old-fashioned stove; and if situated in an isolated place, communication was possible only by messenger at the expense of time and labor. The modern sanitary water service, electric lighting, modern means of construction, and the telephone, make the dwelling-house of to-day a wholly different place from the dwelling-house of fifty years ago.

Steam transportation had already begun its marvelous work before the epoch at which we start, but its great application has been made in the last half-century. Just as the fruitful theories of physics and chemistry have advanced physical science in all its applications, so also the elementary development and application of steam have blossomed in the last half-century into a transportation system which makes the world of to-day a wholly different world from that of fifty years ago.

Perhaps the fundamental application of science which has done the most to change the face of the civilized world is the invention by Sir Henry Bessemer of a cheap means of manufacturing steel from pig iron. On August 13, fifty-one years ago, he read before the British Association at Cheltenham a paper dealing with the invention which has made his name famous. His paper was entitled "The Manufacture of Malleable Iron and Steel without Fuel" and described a new and cheap process of making steel from pig iron by blowing a blast of air through it when in a state of fusion, so as to clear it of all carbon, and then adding the requisite quantity of carbon to produce steel. Not one man in ten thousand knows who

Sir Henry Bessemer was or what he did, but every man who touches civilization leads to-day a different life from that which he would have led, by reason of Bessemer's invention. Cheap steel is the basis of our material advancement.

One of the most interesting applications of chemistry is that involved in the manufacture of aniline colors. Up to the time of the investigation of Sir William Perkin in 1856, commerce had depended on vegetable colors, which had been obtained at great cost and difficulty. That these rainbow hues could ever be procured from so insignificant a substance as coal tar seemed as improbable as anything which one could imagine, and yet from the labors of the chemist there have come in the last thirty years colors surpassing in beauty anything produced by nature. The manufacture of such colors has come to be a great industry, employing thousands of men and enormous capital, and this too out of a waste product which manufacturers were once quite ready to throw away.

One of the most interesting combinations of chemistry and physics is that shown in the modern photograph. Photography as an art had reached a considerable stage of development by the early fifties, but the wet collodion process, as it was called, while possible for the professional, was difficult for the amateur. Plates had to be prepared and finished on the spot, transportation was difficult, and there was a demand for a process which could be used in the field as easily as in the office. The first step came in 1856 in the invention of what was called dry collodion, followed rapidly by similar inventions which did away with the troublesome preparation of the plate, and the modern camera, an instrument, so convenient and easy of transportation, and yet so safe and sure in its results, that on the wildest expeditions the most perfect photographs can be taken.

To-day the word which best represents to the popular mind the triumphant application of science is the word "electricity."

The fruitful idea that electricity, like light, was only a form of energy, lies at the base of great inventions which have been made. The moment that electricity was produced by transforming other forms of energy, there became possible all sorts of machines which could not be imagined under any other hypothesis. It was in the development of this idea that the inventors have perfected during this half-century the electric motor, the electric light, the telephone, and the thousand separate devices by which mechanical energy is transformed into electric energy, and this again into heat or light. It is the machines for these marvelous transformations which have been invented in the last generation that have made the greatest difference in our modern life. The storage battery, the arc light, the incandescent light, and the telephone have all come in as actual parts of our everyday life within the memory of men of middle age, and, as a crowning exploit of the century, telegraphy without wires brings us messages from ships in mid-ocean. In every department of domestic life, in every line of transportation, in almost all methods of communication between men and cities, the application of electricity has come to play a great rôle. So numerous are these applications, so important are they to our comfort and to our well-being, that we have ceased to wonder at them, and year by year new applications are made which a few decades ago would have called forth astonishment, but which we receive as a part of the day's work. So great is this field, so promising are the applications which we may hope to see made, that no man can foretell what the inventions of the future may be.

To-day we are interested not less in the applications of electricity than in its supply. So well is the law of transformation of energy now understood and so sure are the results of our inventors, that we may confidently expect that the applications of electricity to the arts and industries will reach almost any point of perfection. A vital question is, can a

supply of energy be found which can be efficiently and cheaply transformed into electric energy?

At present our chief source of electricity is coal, and the century just closing has given no particular indication of a possible rival to coal, unless it be water power. Over a large part of the earth's surface, however, neither coal nor water power is accessible. Furthermore, the supply of coal is limited. It is likely to become in the near future more and more expensive, and one of the great problems which the inventors of our day face is the problem of devising a cheap and effective source of energy for the production of power.

There is one source to which all minds revert when this question is mentioned, a source most promising and yet one which has so far eluded the investigator. The sun on a clear day delivers upon each square yard of the earth's surface the equivalent of approximately two horse-power of mechanical energy working continuously. If even a fraction of this power could be transformed into mechanical or electrical energy and stored, it would do the world's work. Here is power delivered at our very doors without cost. How to store the energy so generously furnished, and keep it on tap for future use, is the problem. That the next half-century will see some solution thereof, chemical or otherwise, seems likely.

Perhaps in no way have the applications of science so ministered to human happiness as in the contributions of the last fifty years to preventive medicine, surgery, and sanitation. Within this half-century Pasteur did his great work on spontaneous generation and in the development of the theory of anti-toxins. Following in his steps, Lister applied the principles which Pasteur had enunciated, in the treatment of wounds and sores. The whole outcome has been a splendid step forward, not only in such matters as the treatment of diphtheria, yellow fever, and malaria, but also in the direction of preventive medicine. The scientific world is organizing for a fight to the

death with tuberculosis, that worst malady of mankind, and if there is any such advance in general education and in general knowledge during the next fifty years as in the last, it is not too much to hope that this dread scourge of humanity may be vanquished. In no direction in which science touches life is there a greater contrast between the life of fifty years ago and that of to-day than in these matters of preventive medicine, of surgery, and of sanitation; and it is worth recalling that these advances have come, not through the professional physician or surgeon, but through the laboratory investigations of the chemist and of the physicist. Applied chemistry and physics are the sources from which our sanitary and surgical gains have resulted.

A no less striking application of science in this half-century is to be found in those matters which affect transportation, whether on land or sea. Within this brief span of a generation and a half, steam transportation has been so enormously advanced that the transit of the largest oceans has become little more than a pleasure trip. Within this period the first electric car was set rolling over the earth's surface, and the whole development of modern transportation, including the automobile, belongs to this half-century.

Equally impressive, but not so often referred to, are the applications of science in the transmission of intelligence. Fifty years ago the land telegraph was in its infancy, and its use was restricted to messages of pressing business importance. Within the span of time of which we are speaking, the telegraph has been developed into an indispensable adjunct of every civilized man's business. Submarine cables extended under the sea connect all the continents of the earth. Not only have these enormous changes come, but the invention of the telephone makes it possible to transmit the human voice across the space of hundreds of miles; and finally, as a first-fruit of the twentieth-century inventor's work, wireless telegraphy sends its messages through the air from the distant

ship to the shore. These applications, which enable each civilized man to know the business of all the rest, are to have an effect on our mode of life, on our relations with other nations, and on the general culture of the civilized world, such as we perhaps cannot even to-day imagine. One of the results of this development in America is the modern newspaper, filled with news from the ends of the earth. The ease of transmission makes it possible to report not only the important things, but the scandal and the gossip, each item of which ought to die in its own cradle. The modern sensational paper is one of the unripe fruits of the scientific applications of our age. Social development in the last half-century has lagged behind scientific progress and application. The education of the American people in obedience to law and in framing effective legislation for the distribution of the proceeds of production are far behind the scientific efficiency of the age. A serious question of civilization is, "How may the nation be rightly educated and wisely led, to the end that the tremendous productivity of applied science may ennoble and enrich, rather than vulgarize and corrupt it?"

*The Effect of Modern Scientific Research on the Religious Faith
and the Philosophy of Life of the Civilized World*

It is not too much to say that the development of science in these last five decades has produced a greater effect upon the beliefs and the philosophy of civilized man than that of all the centuries preceding. Fifty years ago the scientific world stood upon the brink of a great philosophical conception as to the origin of the system of nature which we see about us. The epoch-making work of Laplace and his contemporary mathematicians upon the development of the solar system, the researches of Lyell concerning the history of our own earth, the work of Buffon and Lamarck, the reflections of the earlier thinkers, like Leibnitz, Schelling, and Kant, all served in their respective branches of science to prepare the world for some

generalizations as to the origin of life and the variations of living forms. In human history there had been recognized an evolution, one form of institution growing out of another, one race out of another, one language out of another. The evidence was beginning to be cumulative that the present is the child of the past, and that the living creatures which we see about us have been evolved, being descendants of ancestral forms on the whole simpler; that those ancestors were descended from still simpler forms, and so on backward. What was needed in 1857 was some well-grounded, intelligible explanation of the variation of species. This explanation came in 1859 in the publication of Charles Darwin's epoch-making book, *The Origin of Species by Means of Natural Selection*. Darwin showed that in natural selection, or what has also been called "the survival of the fittest," is found a natural process which results in the preservation of favorable variations. This process leads to the modification of each creature in relation to its organic conditions of life, and in most cases the change may be regarded as an advance in organization. "Darwinism" is not to be confused with "evolution." Darwin's name has been given to one particular interpretation of the process of evolution. The actual fact of development is proved from so many converging lines that there can be no doubt of the fact itself, although the future growth of our ideas may largely modify the explanation that Darwin has given of it.

Perhaps no single work has produced so great an impression upon the spirit of any age as has Darwin's memorable book upon the intellectual life of Europe and America. The book became at first the centre of a fierce intellectual discussion. Scientific men themselves were divided in their estimate of its importance and its soundness. In Boston, before the American Academy of Science and Arts, there went on during the winter of 1859 and 1860 one of the most spirited scientific debates which our country has ever known, between Professor

Louis Agassiz in opposition to Darwin's theory and Professor William A. Rogers in favor of it. Both were eloquent men, both were eminent in science, and perhaps no series of discussions before a scientific body has been more interesting than those which these two great men carried on at this time.

The outcome of the work of Darwin and his successors has been the practical acceptance by civilized men of the general theory of evolution, however they may differ about the process itself. While the work of the scientific men who have built up the doctrine of evolution, which to-day stands more firmly than ever as a reasonable interpretation of organic nature, was a scientific one and had nothing to do with ultimate problems, nevertheless it was inevitable that such a theory should excite the strongest opposition on the part of the theology of that day. The acrimony of that discussion has long since worn away. Men have had in fifty years a breathing time sufficient to see that however opposed such an explanation of nature may be to the then accepted orthodox theory of creation, neither one nor the other was necessarily connected with true religious life. To-day, in one form or another, nearly all educated men accept the general theory of evolution as the process by which the universe has been developed.

The chief effect, however, of the advance of science during these fifty years upon religious belief and the philosophy of life has come, not so much from the acceptance of the theory of evolution, or the conservation of energy, or other scientific deductions, but rather from the development of what is commonly called "the scientific spirit." To-day a thousand men are working in the investigations of science where ten were working fifty years ago. These men form a far larger proportion of the whole community of intelligent men than they did a half-century ago, and their influence upon the thought of the race is greatly increased. They have been trained in a generation taught to question all processes, to hold fast

only to those things that will bear proof, and to seek for the truth as the one thing worth having. It is this attitude of mind which makes the scientific spirit, and it is the widespread dissemination of this spirit which has affected the attitude of the great mass of civilized men toward formal theology and toward a general philosophy of life. The ability to believe, and even the disposition to believe, is one of the oldest acquirements of the human mind. On the other hand, the capacity for estimating evidence in cases of physical causation has been a recent acquisition. The last fifty years has added enormously to the power of the race in this capacity, and in the consequent demand on the part of all men for trustworthy evidence, not only in the case of physical phenomena, but in all other matters. This spirit is to-day the dominant note of the twentieth century. It is a serious spirit and a reverent one, but it demands to know, and it will be satisfied with no answer which does not squarely face the facts. This intellectual gain is the most note-worthy fruitage of the last fifty years of science and of scientific freedom.

A direct outcome of this development of scientific spirit has been the growth of what has come to be called the higher criticism. The higher criticism is a science whose aim is the determination of the literary history of books and writings, including inquiries into the literary form, the unity, the date of publication, the authorship, the method of composition, the integrity and amount of care shown in any subsequent editing, and into other matters, such as may be discovered by the use of the internal evidence presented in the writing itself. It is termed the higher criticism to distinguish it from the related science of lower, or textual, criticism. This science is almost wholly a child of the last half-century, and in particular is this true so far as Biblical study and criticism are concerned. The development of this school of study along scientific lines has, in connection with the wide spread of the scientific spirit itself, had an enormous effect on the

attitude of civilized man toward formal theology and toward formal religious organizations.

What the outcome of this intellectual development will be, whether it will result in a change of the organizations themselves or the evolution of new organizations for religious teaching along other lines than those which now exist, no one to-day can say. Of this much, however, we may be fairly sure: that although the work of the evolutionists and the higher critics may have affected formal theology, there is no reason for belief that the innate religious spirit of mankind has been weakened. True religion is a life, not a belief; and the religious life of the twentieth century promises to be as deep and genuine, and perhaps more satisfactory, than that of the century before. To-day the figure of Jesus Christ looms larger to the world than it did fifty years ago, and partly for the reason that his life and work are being studied apart from formal theology and independently of formal religious organizations.

The general effect of the whole evolutionary development of the last fifty years upon the philosophy of life of civilized man has been a hopeful one. The old theology pointed man to a race history in which he was represented as having fallen from a high estate to a low one. The philosophy of evolution encourages him to believe that, notwithstanding the limitations which come from a brute ancestry, his course has been upward, and he looks forward to-day hopefully and confidently to a like development in the future.

One who looks over this half-century of development of science cannot but feel something of this hopefulness as he looks forward to the half-century just begun. So little do we know of nature and of nature's laws, so large is their intent in comparison, that we may confidently expect the discoveries of the next half-century to more than equal those of the half-century just passed. The applications of chemistry and of physics are now being pushed by thousands of men better

trained for research than in any generation which preceded. Organized effort in scientific research is begun; transportation, already so highly developed, will become still more convenient. Preventive medicine may well be expected to make enormous strides in the struggle with the great plagues of mankind. The whole scale of human living, so far as comfort and convenience are concerned, we may confidently expect to improve as rapidly as it has in the fifty years gone by. The house of 1950 will be as much superior in comfort and convenience to our homes of to-day as these are to those of a half-century ago.

Finally, we may be sure that during the next fifty years, as during the past, that question which will most interest man is the old one, What is life, and how came it to be? This question has not yet been answered by any fruitful hypothesis like those of Darwin or Lamarck, which have been such effective tools in the hands of investigators. In the aid of the solution of this problem all scientific men are working, either consciously or unconsciously. Much of what they do seems trivial and dry in the eyes of those who are occupied with other thoughts. The man who is engaged in accumulating a million dollars may not easily understand how a student will toil patiently in a laboratory, laboriously gathering together minute data, in order that the generalizers of science may go a step farther in the solution of the problem. To-day the world stands firmly convinced of the universal force of the principle of evolution, and on the other hand looks forward to the realization of independent life and action in the separate cell. Whether in the next half-century science may be able to vanquish the difficulty presented by the atom of living potential protoplasm, the cell, we cannot say, but we may feel sure that great steps toward its solution will be made, and that these steps will be taken in the service of the truth for the truth's sake, which is the watchword of the science of to-day.

CONSERVATION OF NATIONAL RESOURCES ¹

THEODORE ROOSEVELT

Governors of the Several States and Gentlemen:

I WELCOME you to this conference at the White House. You have come hither at my request so that we may join together to consider the question of the conservation and use of the great fundamental sources of wealth of this nation. So vital is this question that for the first time in our history the chief executive officers of the states separately and of the states together forming the nation have met to consider it.

With the Governors come men from each state chosen for their special acquaintance with the terms of the problem that is before us. Among them are experts in natural resources and representatives of national organizations concerned in the development and use of these resources; the Senators and Representatives in Congress; the Supreme Court, the Cabinet and the Inland Waterways Commission have likewise been invited to the conference, which is therefore national in a peculiar sense.

This conference on the conservation of natural resources is in effect a meeting of the representatives of all the people of the United States called to consider the weightiest problem now before the nation, and the occasion for the meeting lies in the fact that the natural resources of our country are in danger of exhaustion if we permit the old wasteful methods of exploiting them longer to continue.

With the rise of peoples from savagery to civilization, and with the consequent growth in the extent and variety

¹ Address to the Congress of Governors on the Conservation of National Resources, Washington, May 13, 1908.

of the needs of the average man, there comes a steadily increasing growth of the amount demanded by this average man from the actual resources of the country. Yet, rather curiously, at the same time the average man is likely to lose his realization of this dependence upon nature.

Savages, and very primitive peoples generally, concern themselves only with superficial natural resources; with those which they obtain from the actual surface of the ground. As peoples become a little less primitive their industries, although in a rude manner, are extended to resources below the surface; then, with what we call civilization and the extension of knowledge, more resources come into use, industries are multiplied and foresight begins to become a necessary and prominent factor in life. Crops are cultivated, animals are domesticated and metals are mastered.

Every step of the progress of mankind is marked by the discovery and use of natural resources previously unused. Without such progressive knowledge and utilization of natural resources population could not grow, nor industries multiply, nor the hidden wealth of the earth be developed for the benefit of mankind.

From the first beginnings of civilization, on the banks of the Nile and the Euphrates, the industrial progress of the world has gone on slowly, with occasional setbacks, but on the whole steadily, through tens of centuries to the present day. But of late the rapidity of the progress has increased at such a rate that more space has been actually covered during the century and a quarter occupied by our national life than during the preceding six thousand years that take us back to the earliest monuments of Egypt, to the earliest cities of the Babylonian plain.

When the founders of this nation met at Independence Hall in Philadelphia the conditions of commerce had not fundamentally changed from what they were when the Phœnician keels first furrowed the lonely waters of the Mediterranean.

The differences were those of degree, not of kind, and they were not in all cases even those of degree. Mining was carried on fundamentally as it had been carried on by the Pharaohs in the countries adjacent to the Red Sea.

The wares of the merchants of Boston, of Charleston, like the wares of the merchants of Nineveh and Sidon, if they went by water were carried by boats propelled by sails or oars; if they went by land were carried in wagons drawn by beasts of draft or in packs on the backs of beasts of burden. The ships that crossed the high seas were better than the ships that had once crossed the *Ægean*, but they were of the same type, after all — they were wooden ships propelled by sails; and on land the roads were not as good as the roads of the Roman Empire, while the service of the posts was probably inferior.

In Washington's time anthracite coal was known only as a useless black stone; and the great fields of bituminous coal were undiscovered. As steam was unknown, the use of coal for power production was undreamed of. Water was practically the only source of power, save the labor of men and animals; and this power was used only in the most primitive fashion. But a few small iron deposits had been found in this country, and the use of iron by our countrymen was very small. Wood was practically the only fuel, and what lumber was sawed was consumed locally, while the forests were regarded chiefly as obstructions to settlement and cultivation.

Such was the degree of progress to which civilized mankind had attained when this nation began its career. It is almost impossible for us in this day to realize how little our Revolutionary ancestors knew of the great store of natural resources whose discovery and use have been such vital factors in the growth and greatness of this nation, and how little they required to take from this store in order to satisfy their needs.

Since then our knowledge and use of the resources of the

present territory of the United States have increased a hundredfold. Indeed, the growth of this nation by leaps and bounds makes one of the most striking and important chapters in the history of the world. Its growth has been due to the rapid development, and, alas! that it should be said, to the rapid destruction, of our natural resources. Nature has supplied to us in the United States, and still supplies to us, more kinds of resources in a more lavish degree than has ever been the case at any other time or with any other people. Our position in the world has been attained by the extent and thoroughness of the control we have achieved over Nature; but we are more, and not less, dependent upon what she furnishes than at any previous time of history since the days of primitive man.

Yet our fathers, though they knew so little of the resources of the country, exercised a wise forethought in reference thereto. Washington clearly saw that the perpetuity of the states could only be secured by union and that the only feasible basis of union was an economic one; in other words, that it must be based on the development and use of their natural resources. Accordingly, he helped to outline a scheme of commercial development, and by his influence an interstate waterways commission was appointed by Virginia and Maryland.

It met near where we are now meeting, in Alexandria, adjourned to Mount Vernon, and took up the consideration of interstate commerce by the only means then available, that of water. Further conferences were arranged, first at Annapolis and then at Philadelphia. It was in Philadelphia that the representatives of all the states met for what was in its original conception merely a waterways conference; but when they had closed their deliberations the outcome was the Constitution which made the states into a nation.

The Constitution of the United States thus grew in large part out of the necessity for united action in the wise use of

one of our natural resources. The wise use of all of our natural resources, which are our national resources as well, is the great material question of to-day. I have asked you to come together now because the enormous consumption of these resources, and the threat of imminent exhaustion of some of them, due to reckless and wasteful use, once more call for common effort, common action.

Since the days when the Constitution was adopted, steam and electricity have revolutionized the industrial world. Nowhere has the revolution been so great as in our own country. The discovery and utilization of mineral fuels and alloys have given us the lead over all other nations in the production of steel. The discovery and utilization of coal and iron have given us our railways, and have led to such industrial development as has never before been seen. The vast wealth of lumber in our forests, the riches of our soils and mines, the discovery of gold and mineral oils, combined with the efficiency of our transportation, have made the conditions of our life unparalleled in comfort and convenience.

The steadily increasing drain on these natural resources has promoted to an extraordinary degree the complexity of our industrial and social life. Moreover, this unexampled development has had a determining effect upon the character and opinions of our people. The demand for efficiency in the great task has given us vigor, effectiveness, decision and power, and a capacity for achievement which in its own lines has never yet been matched. So great and so rapid has been our material growth that there has been a tendency to lag behind in spiritual and moral growth; but that is not the subject upon which I speak to you to-day.

Disregarding for the moment the question of moral purpose, it is safe to say that the prosperity of our people depends directly on the energy and intelligence with which our natural resources are used. It is equally clear that these resources are the final basis of national power and perpetuity. Finally,

it is ominously evident that these resources are in the course of rapid exhaustion.

This nation began with the belief that its landed possessions were illimitable and capable of supporting all the people who might care to make our country their home; but already the limit of unsettled land is in sight, and indeed but little land fitted for agriculture now remains unoccupied save what can be reclaimed by irrigation and drainage. We began with an unapproached heritage of forests; more than half of the timber is gone. We began with coal fields more extensive than those of any other nation and with iron ores regarded as inexhaustible, and many experts now declare that the end of both iron and coal is in sight.

The mere increase in our consumption of coal during 1907 over 1906 exceeded the total consumption in 1876, the centennial year. The enormous stores of mineral oil and gas are largely gone. Our natural waterways are not gone, but they have been so injured by neglect and by the division of responsibility and utter lack of system in dealing with them that there is less navigation on them now than there was fifty years ago. Finally, we began with soils of unexampled fertility and we have so impoverished them by injudicious use and by failing to check erosion that their crop-producing power is diminishing instead of increasing. In a word, we have thoughtlessly, and to a large degree unnecessarily, diminished the resources upon which not only our prosperity but the prosperity of our children must always depend.

We have become great because of the lavish use of our resources, and we have just reason to be proud of our growth. But the time has come to inquire seriously what will happen when our forests are gone, when the coal, the iron, the oil and the gas are exhausted, when the soils shall have been still further impoverished and washed into the streams, polluting the rivers, denuding the fields and obstructing navigation. These questions do not relate only to the next century or to

the next generation. It is time for us now as a nation to exercise the same reasonable foresight in dealing with our great natural resources that would be shown by any prudent man in conserving and wisely using the property which contains the assurance of well-being for himself and his children.

The natural resources I have enumerated can be divided into two sharply distinguished classes accordingly as they are or are not capable of renewal. Mines if used must necessarily be exhausted. The minerals do not and can not renew themselves. Therefore, in dealing with the coal, the oil, the gas, the iron, the metals generally, all that we can do is to try to see that they are wisely used. The exhaustion is certain to come in time.

The second class of resources consists of those which can not only be used in such manner as to leave them undiminished for our children, but can actually be improved by wise use. The soil, the forests, the waterways, come in this category. In dealing with mineral resources, man is able to improve on nature only by putting the resources to a beneficial use, which in the end exhausts them; but in dealing with the soil and its products man can improve on nature by compelling the resources to renew and even reconstruct themselves in such manner as to serve increasingly beneficial uses — while the living waters can be so controlled as to multiply their benefits.

Neither the primitive man nor the pioneer was aware of any duty to posterity in dealing with the renewable resources. When the American settler felled the forests he felt that there was plenty of forest left for the sons who came after him. When he exhausted the soil of his farm he felt that his son could go West and take up another. So it was with his immediate successors. When the soil washed from the farmer's fields choked the neighboring river he thought only of using the railway rather than boats for moving his produce and supplies.

Now all this is changed. On the average the son of the farmer of to-day must make his living on his father's farm. There is no difficulty in doing this if the father will exercise wisdom. No wise use of a farm exhausts its fertility. So with the forests. We are on the verge of a timber famine in this country, and it is unpardonable for the nation or the states to permit any further cutting of our timber save in accordance with a system which will provide that the next generation shall see the timber increased instead of diminished. Moreover, we can add enormous tracts of the most valuable possible agricultural land to the national domain by irrigation in the arid and semi-arid regions, and by drainage of great tracts of swamp land in the humid regions. We can enormously increase our transportation facilities by the canalization of our rivers so as to complete a great system of waterways on the Pacific, Atlantic and Gulf coasts and in the Mississippi Valley, from the Great Plains to the Alleghenies and from the northern lakes to the mouth of the mighty Father of Waters. But all these various uses of our natural resources are so closely connected that they should be co-ordinated, and should be treated as part of one coherent plan and not in haphazard and piecemeal fashion.

It is largely because of this that I appointed the Waterways Commission last year, and that I have sought to perpetuate its work. I wish to take this opportunity to express in heartiest fashion my acknowledgment to all the members of the commission. At great personal sacrifice of time and effort they have rendered a service to the public for which we cannot be too grateful. Especial credit is due to the initiative, the energy, the devotion to duty and the far-sightedness of Gifford Pinchot, to whom we owe so much of the progress we have already made in handling this matter of the coördination and conservation of natural resources. If it had not been for him this convention neither would nor could have been called.

We are coming to recognize as never before the right of the nation to guard its own future in the essential matter of natural resources. In the past we have admitted the right of the individual to injure the future of the Republic for his own present profit. The time has come for a change. As a people we have the right and the duty, second to none other but the right and duty of obeying the moral law, of requiring and doing justice, to protect ourselves and our children against the wasteful development of our natural resources, whether that waste is caused by the actual destruction of such resources or by making them impossible of development hereafter.

Any right-thinking father earnestly desires and strives to leave his son both an untarnished name and a reasonable equipment for the struggle of life. So this nation as a whole should earnestly desire and strive to leave to the next generation the national honor unstained and the national resources unexhausted. There are signs that both the nation and the states are waking to a realization of this great truth. On March 10, 1908, the Supreme Court of Maine rendered an exceedingly important judicial decision. This opinion was rendered in response to questions as to the right of the Legislature to restrict the cutting of trees on private land for the prevention of drouths and floods, the preservation of the natural water supply and the prevention of the erosion of such lands and the consequent filling up of rivers, ponds and lakes. The forests and water power of Maine constitute the larger part of her wealth and form the basis of her industrial life, and the question submitted by the Maine Senate to the Supreme Court and the answer of the Supreme Court alike bear testimony to the wisdom of the people of Maine and clearly define a policy of conservation of natural resources the adoption of which is of vital importance not merely to Maine but to the whole country.

Such a policy will preserve soil, forests, water power as a

heritage for the children and the children's children of the men and women of this generation; for any enactment that provides for the wise utilization of the forests, whether in public or private ownership, and for the conservation of the water resources of the country must necessarily be legislation that will promote both private and public welfare; for flood prevention, water power development, preservation of the soil and improvement of navigable rivers are all promoted by such a policy of forest conservation.

The opinion of the Maine Supreme bench sets forth unequivocally the principle that the property rights of the individual are subordinate to the rights of the community, and especially that the waste of wild timber land derived originally from the state, involving as it would the impoverishment of the state and its people and thereby defeating one great purpose of government, may properly be prevented by state restrictions.

The court says that there are two reasons why the right of the public to control and limit the use of private property is peculiarly applicable to property in land: "First, such property is not the result of productive labor, but is derived solely from the state itself, the original owner; second, the amount of land being incapable of increase, if the owners of large tracts can waste them at will without state restrictions, the state and its people may be helplessly impoverished and one great purpose of government defeated. . . . We do not think the proposed legislation would operate to 'take' private property within the inhibition of the Constitution. While it might restrict the owner of wild and uncultivated lands in his use of them, might delay his taking some of the product, might delay his anticipated profits and even thereby might cause him some loss of profit, it would nevertheless leave him his lands, their product and increase, untouched, and without diminution of title, estate or quantity. He would still have large measure of control and large opportunity to

realize values. He might suffer delay—but not deprivation. . . . The proposed legislation . . . would be within the legislative power and would not operate as a taking of private property for which compensation must be made.”

The Court of Errors and Appeals of New Jersey has adopted a similar view, which has recently been sustained by the Supreme Court of the United States. In delivering the opinion of the court on April 6, 1908, Mr. Justice Holmes said: “The state as quasi-sovereign and representative of the interests of the public has a standing in court to protect the atmosphere, the water and the forests within its territory, irrespective of the assent or dissent of the private owners of the land most immediately concerned. . . . It appears to us that few public interests are more obvious, indisputable and independent of particular theory than the interest of the public of a state to maintain the rivers that are wholly within it substantially undiminished, except by such drafts upon them as the guardian of the public welfare may permit for the purpose of turning them to a more perfect use. This public interest is omnipresent wherever there is a state, and grows more pressing as population grows. . . . We are of opinion, further, that the constitutional power of the state to insist that its natural advantages shall remain unimpaired by its citizens is not dependent upon any nice estimate of the extent of present use or speculation as to future needs. The legal conception of the necessary is likely to be confined to somewhat rudimentary wants, and there are benefits from a great river that might escape a lawyer’s view. But the state is not required to submit even to an æsthetic analysis. Any analysis may be inadequate. It finds itself in possession of what all admit to be a great public good, and what it has it may keep and give no one a reason for its will.”

These decisions reach the root of the idea of conservation of our resources in the interests of our people.

Finally, let us remember that the conservation of our

natural resources, though the gravest problem of to-day, is yet but part of another and greater problem to which this nation is not yet awake, but to which it will awake in time, and with which it must hereafter grapple if it is to live — the problem of national efficiency, the patriotic duty of insuring the safety and continuance of the nation. When the people of the United States consciously undertake to raise themselves as citizens, and the nation and the states in their several spheres, to the highest pitch of excellence in private, state and national life, and to do this because it is the first of all the duties of true patriotism, then and not till then the future of this nation in quality and in time will be assured.

HUXLEY ¹

PAUL ELMER MORE

IN a world that is governed by phrases we cannot too often recur to the familiar saying of Hobbes, that "words are wise men's counters, they do but reckon by them; but they are the money of fools"; and so to-day, when the real achievements of science have thrown a kind of halo about the word and made it in the general mind synonymous with truth, the first duty of any one who would think honestly is to reach a clear definition of what he means when he utters the sanctified syllables. In this particular case the duty and difficulty are the greater because the word conveys three quite different meanings which have correspondingly different values. Positive science is one thing, but hypothetical science is another thing, and philosophical science is still another; yet on the popular tongue, nay, even in the writings of those who pretend to extreme precision, these distinctions are often forgotten, to the utter confusion of ideas.

By positive science I mean the observation and classification of facts and the discovery of those constant sequences in phenomena which can be expressed in mathematical formulæ or in the generalized language of law; I mean that procedure which Huxley had in mind when he said that science is "nothing but trained and organized common sense, differing from the latter only as a veteran may differ from a raw recruit: and its methods differ from those of common sense only so far as the guardsman's cut and thrust differ from the manner in which a savage wields his club." Now for such a procedure no one can feel anything but the highest respect —

¹ From *The Drift of Romanticism*; copyright. Reprinted by permission of the author and of Houghton Mifflin Company.

respect which in the lay mind may well mount to admiration and even to awe. He has but a poor imagination who cannot be stirred to wonder before the triumphs over material forces gained by methods of which he can confess only humble ignorance; and beyond these visible achievements lies a whole region of intellectual activity open to the man of science, but closed and forever foreign to the investigator in other kinds of ideas. I am bound to insist on the fact that I have no foolish desire to belittle the honors of science in its practical applications, and that I can in a way estimate its rewards as an abstract study, however far the full fruition of the scientific life may lie beyond my reach.

Positive science, thus defined as that trained observation which brings the vision of order out of disorder, system out of chaos, law out of chance, might seem splendid enough in theory and useful enough in practice to satisfy the most exorbitant ambition. But it must be remembered that a law of science, however wide its scope, does not go beyond a statement of the relation of observed facts and tells us not a word of what lies behind this relationship or of the cause of these facts. Now the mind of man is so constituted that this ignorance of causes is to it a constant source of irritation; we are almost resistlessly tempted to pass beyond the mere statement of law to erecting a theory of the reality that underlies the law. Such a theory is an hypothesis, and such activity of the mind is hypothetical science as distinguished from positive science. But we must distinguish further. The word hypothesis is used, by the man of science as well as by the layman, in two quite different senses. On the one hand, it may mean the attempt to express in language borrowed from our sensuous experience the nature of a cause or reality which transcends such experience. Thus the luminiferous ether is properly an hypothesis: by its very definition it transcends the reach of our perceptive faculties; we cannot see it, or feel it in any way; yet it is, or was, assumed to

exist as the cause of known phenomena and its properties were given in terms of density, elasticity, etc., which are appropriate to material things which we can see and feel. On the other hand, the word hypothesis is often taken to signify merely a scientific law which belongs to the realm of positive science, but which is still to be established. Confusion would be avoided if we employed the term scientific conjecture for this second, and proper, procedure, and confined the use of the term hypothesis to the former, and as I think improper, procedure. To make clear these distinctions let me give an illustration or two. The formula of gravitation merely states the regularity of a certain group of known phenomena from the motion of a falling apple to the motion of the planets about the sun. When this formula first dawned on the mind of Newton, it was a scientific conjecture; when it was tested and proved to conform to facts, it became an accepted scientific law. Both conjecture and accepted law are strictly within the field of positive science. But if Newton, not content with generalizing the phenomena of gravitation in the form of a law, had undertaken to theorize on the absolute nature of the attraction which caused the phenomena of gravitation,¹ he would have passed from the sphere of positive science to that of hypothetical science. So when Darwin, by systematizing the vast body of observations in biology and geology, showed that plants and animals develop in time and with the changes of the earth from the simplest forms of animate existence to the most complex forms now seen, and thus gave precision to the law of evolution, he was working in the field of positive science: he changed what had been a conjectured law to a generally accepted law. But when he went a step further and undertook to explain the cause of this evolution by the theory of natural selection or the survival of the fit, he passed from positive to hypothetical science.

¹ On this point compare Berkeley, *Siris*, §§ 245-250.

In my essay on Newman I found it convenient to classify the minds of men figuratively in an inner and an outer group. In the outer group I placed the two extremes of the mystic and the sceptic, and in the inner group the non-mystical religious mind and the non-sceptical scientific mind. These two classes of the inner group differ in their field of interest, the one being concerned with the observation of spiritual states, the other with the observation of material phenomena; but they agree in so far as the former passes from the facts of his spiritual consciousness to the belief in certain causes conceived as mythological beings and known by revelation, while the latter passes from the facts of his material observations to the belief in certain causes conceived as hypotheses and known by inference. Hypotheses, in other words, are merely the mythology, the *deus ex machina*, of science, and they are eradicated from the scientific mind only by the severest discipline of scepticism, just as mythology is eradicated from the religious mind by genuine mysticism. I am aware of the danger of inculcating such an eradication. As for most men to take away the belief in their gods as known realities would be to put an end to their religion, so, it may be objected, to take away these hypotheses would be to endanger the very foundations of science. Yet, even if scientific hypotheses, in consideration of human frailty, may have their use just as mythologies have their use, I still protest that they are not necessary to scientific discovery, as is proved by the great example of Newton. I believe, though my temerity may only be equalled by my ignorance, that they have oftener introduced confusion into pure science than they have aided in the discovery of new laws or in the broadening of known laws; and I am confirmed in this belief by the present state of biology. Darwin's law of evolution has remained virtually unshaken and has, I suppose, been the instigation of innumerable discoveries; but, so far as I may judge from my limited reading in the subject, Darwin's

hypothesis of natural selection and the survival of the fit has on the one hand been seriously and widely questioned as a cause sufficient to account for evolution, and on the other hand has led to speculation to find a substitute for it which in wildness of theorizing and in audacity of credulousness can only be likened to the intricacies of religious scholasticism.

The condemnation of hypothetical science as dangerous to integrity of mind is no new thing. Even in the seventeenth century Joseph Glanvill saw how surely the enthusiasm engendered by the foundation of the Royal Society would lead to vain hypotheses. In his *Scepsis Scientifica* he sets forth their nature and forestalls Hume's destructive analysis of our notion of causality, with strong warning that the man of science should not "build the *Castle* of his intellectual security, in the *Air of Opinions*. . . . Opinions [he adds, meaning hypotheses] are the Rattles of immature intellects. . . . *Dogmatizing* is the great disturber both of our *selves* and the *world* without us." In the next age Bolingbroke, in his *Essays Addressed to Mr. Pope*, argued the question of the limits of human knowledge and the fallacies of hypothetical theorizing with a clearness and penetration which would have made that work one of the bulwarks of English philosophy, were it not for my Lord's disdain of the rules of composition and the tediousness of his endless repetitions, and were it not above all for his own inconsistency in urging the most colossal of all hypotheses, that of universal optimism. In particular he takes up, more than once, the common plea that hypotheses are useful, whether true or not.

It will be urged, perhaps, as decisive in favor of hypotheses [he observes], that they may be of service, and can be of no disservice to us, in our pursuit of knowledge. An hypothesis founded on mere arbitrary assumptions will be a true hypothesis, and therefore of service to philosophy, if it is confirmed by many observations afterwards, and if no one phenomenon stand in opposition to it. An hypothesis that appears inconsistent with the phenomena will be soon demonstrated false, and as soon rejected.

In reply he shows by example how hypotheses have kept men from the right path of investigation and how they have been maintained (what rich and even ridiculous examples he might have produced from our age) after they have been proved inconsistent with facts and common sense. "The fautors of hypotheses would have us believe that even the detection of their falsehood gives occasion to our improvement in knowledge. But the road to truth does not lie through the precincts of error." Now, it is true that neither Glanvill nor Bolingbroke distinguished between the legitimate use of scientific conjecture and the illegitimate use of hypotheses, but they had chiefly in mind, I think, not the mere formulation of law but the attempt to penetrate into ultimate causes.

The chief fault of hypotheses, however, lies not in the entanglement of pure science among perilous ways and in the lifting up of the scientific imagination to idolatrous worship, as it were, of the *chimæra bombinans in vacuo*, but in the almost irresistible tendency of the human mind to glide from hypothetical science into what I have called philosophical science, meaning thereby the endeavor to formulate a philosophy of life out of scientific law and hypothesis. An hypothesis may be proclaimed by the man of science as a purely subjective formula for a group of phenomena, and as a confessedly temporary expedient for advancing a little further in the process of bringing our observations under the regularity of law; the man of science may pretend verbally to a purely sceptical attitude towards his transcendental definitions, but in practice this scepticism almost invariably gives way to a feeling that the formula for causes is as real objectively as the law of phenomena which it undertakes to explain, and to a kind of supercilious intolerance for those who maintain the sceptical attitude practically as well as verbally, or for those who build their faith on hypotheses of another sort than his own. Hence the hostility that has constantly existed between those who base their philosophy of life on intuition and

the humanities and those who base it upon scientific law and hypothesis. At the very beginning of the modern scientific movement this antagonism made itself felt, and, as religion had then the stronger position in society, took the form of apologetics on the part of science. In what may be called the authorized *History of the Royal Society*, Bishop Sprat undertook to allay the suspicions that had immediately arisen against the chartered organization of experimental science. With specious sophistry he argued that the "new philosophy" would never encroach on the established system of education in the humanities. He admitted the natural alliance between science and industry against the feudal form of government, but asserted that science in this was only a handmaid of the times.

Nor ought our *Gentry* [he declares] to be averse from the promoting of *Trade*, out of any little Jealousy, that thereby they shall debase themselves, and corrupt their Blood: For they are to know, that *Trafick* and *Commerce* have given Mankind a higher Degree than any Title of *Nobility*, even that of *Civility* and *Humanity* itself. And at this time especially above all others, they have no reason to despise *Trade* as below them, when it has so great an influence on the very *Government* of the World. In former Ages indeed this was not so remarkable.

Primarily, however, Sprat, as a prelate in good standing, contended that religion stood in no danger from the deductions of the new philosophy:

I do here, in the beginning, most sincerely declare, that if this Design [of the Royal Society] should in the least diminish the *Reverence*, that is due to the *Doctrine of Jesus Christ*, it were so far from deserving *Protection*, that it ought to be abhorr'd by all the *Politick* and *Prudent*; as well as by the devout Part of Christendom. . . . With these Apprehensions I come to examine the *Objections*, which I am now to satisfy: and having calmly compar'd the Arguments of some devout Men against *Knowledge*, and chiefly that of *Experiments*; I must pronounce them both, to be altogether inoffensive. I did before affirm, that the *Royal Society* is abundantly cautious, not to intermeddle in *Spiritual Things*. . . . So true is that Saying of my Lord Bacon, *That by a little Knowledge of Nature Men become Atheists; but a great deal returns them back again to a sound and religious*

Mind. In brief, if we rightly apprehend the Matter, it will be found that it is not only Sottishness, but Prophaneness, for Men to cry out against the understanding of *Nature*; for that being nothing else but the Instrument of *God*, whereby he gives Being and Action to *Things*; the *Knowledge* of it deserves so little to be esteem'd impious, that it ought rather to be reckon'd as *Divine*.

It may seem a little illogical in the good Bishop first to apologize for science as having no finger in *Spiritual Things* and then to exalt it as a bulwark against atheism, but such an inconsistency is very human, and it is an example of the almost irresistible tendency of the mind to use its own specific form of knowledge as a criterion of all knowledge. The vacillation between apology and presumption introduced by the historian of the Royal Society has persisted to this day, and in essay after essay of Huxley's you will find the modern president of the Society maintaining on one page the self-limitations of positive science and on another page passing from hypothesis to a dogmatic philosophy, here rebuking those who confound the domains of scientific and spiritual law and there proclaiming science as a support of what he deems true religion. Much that he wrote was directed to temporary questions, and to open his volumes may seem even now to breathe the dust of battles fought long ago and rendered meaningless by the advance of time; but in reality, though their outer form may change, the disputes in which he engaged have not yet been settled as he so fondly believed they were, and can never be settled unless a sullen apathy be taken for assent.

Certainly Huxley, looking back from his quiet retirement at Eastbourne over his long and belligerent career, might be justified in thinking that victory was altogether the reward of his laborious life. He had had no other regular instruction than what he received for a couple of years in the semi-public school at Ealing of which his father was assistant master, and what he gained from lectures in Sydenham College, London, and at Charing Cross Hospital. In 1846, at the age of twenty-

one, he was appointed surgeon to H.M.S. *Rattlesnake* which was bound for a long surveying cruise in the Torres Straits. After four years in the Far East he returned to England, with a large experience in zoölogical and ethnological work, and with no immediate prospects of advancement. His first experience in London was embittered by governmental delays and neglect, but in 1851 he was elected a Fellow of the Royal Society, receiving the Gold Medal the next year, and in 1854 he was appointed professor of natural history at the School of Mines. After that honors and offers came to him in rapid succession. He could not be tempted to leave London, where he felt himself at the centre of things, but in 1872 he accepted the position of Lord Rector of Aberdeen University, since this office afforded him an opportunity of exerting an influence on national education without giving up his residence in the capital. In 1883 he was chosen president of the Royal Society, and in 1892, in lieu of a title which he would not accept, he was raised to the Privy Council. It is not insignificant of his position in England that, on the occasion of kissing hands with the other Councillors at Osborne, when he snatched an opportunity for obtaining a close view of the Queen, he found Her Majesty's eyes fixed upon himself with the same inquisitiveness.

But the most sensible triumphs were no doubt those that came to him in public as the recognized spokesman of the new philosophy, and of these, two of a personal sort, gained at Oxford, the very citadel of the forces leagued against him, must have been peculiarly sweet. Every one knows of his famous tilt with Wilberforce at the meeting of the British Association at Oxford in 1860. It was just after the publication of *The Origin of Species*, and the Bishop of Oxford thought it a proper occasion to demolish the rising heresy with argument and ridicule. The lecture-room was crowded, the clergy being massed in the centre of the audience, and the very windows being packed with ladies who encouraged

the champion of religion with their fluttering handkerchiefs. The Bishop spoke for an hour, assuring his hearers that there was nothing in the idea of evolution, and then, turning "with a smiling insolence" to Huxley who was sitting on the platform, "begged to know, was it through his grandfather or his grandmother that he claimed his descent from a monkey." At this Huxley is said to have struck his hand upon his knee, and to have exclaimed to his neighbor, "The Lord hath delivered him into mine hands." Then, as the event was described in *Macmillan's Magazine*, he "slowly and deliberately arose. A slight, tall figure, stern and pale, very quiet and very grave, he stood before us and spoke those tremendous words — words which no one seems sure of now, nor, I think, could remember just after they were spoken, for their meaning took away our breath, though it left us in no doubt as to what it was." According to Huxley's son and biographer the most accurate report of the concluding words is in a letter of John Richard Green:

I asserted — and I repeat — that a man has no reason to be ashamed of having an ape for his grandfather. If there were an ancestor whom I should feel shame in recalling it would rather be a *man* — a man of restless and versatile intellect — who, not content with an equivocal success in his own sphere of activity, plunges into scientific questions with which he has no real acquaintance, only to obscure them by an aimless rhetoric, and distract the attention of his hearers from the real point at issue by eloquent digressions and skilled appeals to religious prejudice.

Again, at another meeting of the British Association at Oxford, in 1894, Huxley appeared as a champion of Darwinism against the insinuations of Lord Salisbury, who, in his speech as president, spoke with delicate irony "of the 'comforting word, evolution,' and, passing to the Weismanian controversy, implied that the diametrically opposed views so frequently expressed nowadays threw the whole process of evolution into doubt."¹ But things were not

¹ Professor H. F. Osborn in *Transactions of the N. Y. Acad. Sci.*, vol. xv.

what they had been. The ready and vociferous applause was for the prophet of Darwinism, and Huxley, instead of repelling sarcasm with invective, now conscious of his triumphant position and of the courtesy due to one who as Prime Minister had only two years before honored him with the Privy Councillorship, was compelled to veil "an unmistakable and vigorous protest in the most gracious and dignified speech of thanks." It was his last public appearance on any important occasion, a proper and almost majestic conclusion to his long warfare. He died on June 29 of the following year, having just completed his threescore and ten. By his direction three lines from a poem by his wife were inscribed on his tomb-stone:

Be not afraid, ye waiting hearts that weep;
For still He giveth His beloved sleep,
And if an endless sleep He wills, so best.

Better, if he could have known them, would have been the words spoken only the other day by the Vice-Chancellor of Cambridge at the great dinner given at the university on the occasion of Darwin's centenary:

I claim as a theologian — and I see representatives of law, music, and letters, and many other sciences and arts present — that only one spirit animates us all, and I should beg that we might be included in the term "naturalists."

Now to Huxley more than to any other one man in England is due this victory, seeming to some so complete and final; he more than any other one man stood in the nineteenth century for the triple power of positive and hypothetical science and of philosophical science in the form of naturalism. Of his work in positive science I am incompetent to speak, but I can at least say that it was important enough to give him honourable standing among investigators and to clothe his popular utterances with authority. His great opportunity came with the publication of *The Origin of Species* when he

was thirty-four years old, and for the remaining thirty-six years of his life he was the valiant and aggressive champion of evolution and the Darwinian hypothesis against all comers, whether they were mighty men of the Church or of Parliament. He was, so to speak, the Plato to the Socrates of the new philosophy, applying its premises to every department of life. His power in this field was conditioned by his knowledge of science and of philosophy, but it depended also on his consummate skill in the use of language. To read his essays, which deal so magnificently with old disputes and forgotten animosities, is to feel — at least a literary man may be pardoned for so feeling — that here is one of the cunning artificers lost to letters, an essayist who, if he had devoted his faculties to the more permanent aspect of truth, might have taken a place among the great masters of literature. Certainly in sarcasm and irony he had no superior, unless it was Matthew Arnold, whom, indeed, he in many superficial respects resembles. He had, no doubt, easy material in the bishops, and the epithet *épiscopophagous*, which he pleasantly coined for himself, tells the story of that contest in a word. Better material yet was afforded by Gladstone when, rushing in where bishops feared to tread, he undertook to uphold the cosmogony of Genesis as scientifically correct. Whatever one's attitude towards philosophical science may be, one can acknowledge a feeling of unreserved glee in seeing that flabby, pretentious intellect pricked and slashed in such masterly fashion. Satire like the following is never old:

In particular, the remarkable disquisition which covers pages 11 to 14 of Mr. Gladstone's last contribution [to the *Nineteenth Century*, January, 1886] has greatly exercised my mind. Socrates is reported to have said of the works of Heraclitus that he who attempted to comprehend them should be a "Delian swimmer," but that, for his part, what he could understand was so good that he was disposed to believe in the excellence of that which he found unintelligible. In endeavouring to make myself master of Mr. Gladstone's meaning in these pages, I have often been overcome by a feeling analogous to that of Socrates, but not quite the same. That which I do

understand has appeared to me so very much the reverse of good, that I have sometimes permitted myself to doubt the value of that which I do not understand.

That is the true joy of battle, that keeps the wrangling of ancient days forever young:

Full of the god that urged their burning breast,
The heroes thus their mutual warmth express'd.

In the case of Huxley himself there is no question of what we understand and what we do not understand. All in his writing is of that peculiarly lucid quality which is an argument in itself, for we are prone to accept the canon that what is clear must be true. Yet there is a distinction. Though, so far as regards the end immediately in view, Huxley is always a master of logical precision, one discovers, in reading him largely, that his ends are not always the same, and that in the total effect of his works there lies concealed an insoluble ambiguity. So it is that, though in one sense his strongest intellectual trait was, as his son says, "an uncompromising passion for truth," yet in the sum of his thinking he was one of the master sophists of the age. And the tracks of his sophistry lead straight to that confusion of positive science and hypothetical science and philosophical science which is, perhaps, the most characteristic mark of the last century.

Agnosticism, according to Huxley's own definition of the word which he invented to sum up his intellectual procedure, is neither scepticism nor dogmatism; it "is not properly described as a 'negative' creed, nor indeed as a creed of any kind, except in so far as it expresses absolute faith in the validity of a principle, which is as much ethical as intellectual, . . . that it is wrong for a man to say that he is certain of the objective truth of any proposition unless he can produce evidence which logically justifies that certainty." Agnosticism, then, is merely the honest adherence to evidence. Now no state of mind could be more exemplary than that of the agnostic when so defined. It has only one weakness, that,

if we could accept their own opinion, it includes all men, and so *defines* nothing. Huxley, indeed, contrasts the procedure of the agnostic with theology, and declares that "agnosticism can be said to be a stage in its evolution, only as death may be said to be the final stage in the evolution of life." Really, the whole argument, for one so keen as Huxley, is rather naïve. Does he suppose that Cardinal Newman, for instance, would admit that his theological hypothesis was any less supported by evidence than the evolutionary hypothesis? As a matter of fact Newman might retort that he had with him the evidence of ages, whereas Huxley was depending at bottom on the evidence of only a few decades of time. The difference between them does not lie in their loyalty or disloyalty to evidence *per se*, but in the kind of evidence from which they start; nor has Huxley, so far as I know, ever shown, or even seriously tried to show, that the inner evidence which gives us the sense of moral liberty and responsibility, of sin and holiness, is less logically trustworthy than the evidence of the eye and the ear.

That is the weakness of agnosticism as defined by its inventor, but it has a compensating advantage. As actually used by him it is at once a sword of offense and a buckler of safety; permitting the most truculent dogmatism when the errors of an enemy are to be exposed and the most elusive scepticism when the enemy charges in return. Indeed, an agnostic might briefly and not unfairly be defined as a dogmatist in attack and a sceptic in defense, which is but another way of calling him a sophist. With what dexterity Huxley wielded this double weapon may be seen in his use of the great question of scientific law. More than once (*e.g.*, *Science and Christian Tradition*, p. 134), when certain deductions from the rigid application of law are brought home to him, he takes refuge in a sceptical limitation of law to the mere formulation of objective experience in a world which is ultimately moved by forces beyond the reach of man's perceptive faculties.

And against the preacher who rashly invades the scientific field he can declare that "the habitual use of the word 'law,' in the sense of an active thing, is almost a mark of pseudo-science; it characterizes the writings of those who have appropriated the forms of science without knowing anything of its substance." Yet in the same essay, when he opens the attack upon those who would retreat into a region beyond scientific law, he avows boldly "the fundamental axiom of scientific thought," "that there is not, never has been, and never will be, any disorder in nature. The admission of the occurrence of any event which was not the logical consequence of the immediately antecedent events, according to these definite, ascertained, or unascertained rules which we call the 'laws of nature,' would be an act of self-destruction on the part of science." And elsewhere: "We ignore, even as a possibility, the notion of any interference with the order of Nature." Now when we consider that to regard the act of the will which originates the motion of raising the arm as a force in any way contrary to the law of gravitation, is in Huxley's mind an unscientific absurdity (*Pseudo-Scientific Realism, passim*), that, in other words, life and the world are to him a pure mechanism, and when we consider further that he identifies the claims of science with the desire of truth (*Universities: Actual and Ideal, passim*), it really should not have seemed to him so grave an error to use the word law for that force which produces the absolute uniformity defined by law. It is Huxley himself in these moments of attack who virtually, if not literally, takes law "in the sense of an active thing," which in his moments of defense he so vigorously repudiates.

Inevitably this ambiguity of attitude becomes even more perplexed when he applies the notion of scientific law to the deeper problems of life. In one place, for instance, he asserts that "there lies in the nature of things a reason for every moral law, as cogent and as well defined as that which under-

lies every physical law." But in another place he takes what, from his principles, must be regarded as the opposite point of view: "The notion that the doctrine of evolution can furnish a foundation for morals seems to me to be an illusion"; and again he states roundly that "cosmic nature is no school of virtue, but the headquarters of the enemy of ethical nature." This ambiguity of his position involves not only morals but the fundamental question of spirituality and materialism. In his freer moments of attack he does not hesitate to fling out the most relentless dogmas of materialism. The actuality of the spiritual world, he declares in one of his prefaces, lies entirely within the province of science — that is to say, is amenable to the undeviating operation of mechanical law; "the materials of consciousness are products of cerebral activity," and are "the result of molecular forces"; "we are," by an extension of the Cartesian theory of the lower animals, "conscious automata, . . . parts of the great series of causes and effects which, in unbroken continuity, composes that which is, and has been, and shall be — the sum of existence." That should seem to be the most explicit materialism and necessitarianism; yet hear the same man on the other side! "For my part, I utterly repudiate and anathematize the intruder [this same necessitarianism]. Fact I know; and Law I know; but what is Necessity, save an empty shadow of my own mind's throwing?" In other words, when your enemy talks loosely of miracles and spiritual experiences and supernatural freedom, it is easy to crush him with this bludgeon of an unbroken law of mechanical cause and effect; but when your enemy turns on you and begins to draw disagreeable conclusions from this fatal sequence, it is the part of the skilful fencer to denounce as an empty shadow any connection between such a law and necessity! Further than that, Huxley when hard pressed, instead of abiding manfully by his premises, was ready to sink into that last sophistry of the scientific mind and deny that there

is any distinction between the materialistic and the spiritualistic conception of life. "In itself," he says, "it is of little moment whether we express the phænomena of matter in terms of spirit; or the phænomena of spirit in terms of matter." This view he buttresses (*Science and Morals*) by calmly assuming that St. Augustine and Calvin were at one with him in holding to a fatal determination. Is it necessary to say that St. Augustine and Calvin — whether rightly or wrongly is here not the question — believed in a spiritual power apart from and undetermined by natural law? This power might have its own determinism, but, relatively to natural law, it was spontaneous and incalculable. The difference to philosophy and conduct between holding a spiritual fatalism and holding a mechanical determinism marks the distance between religion and science — or, at least, between the positions of the English bishops and of Huxley. If there is no distinction here, why then all the pother, and what meaning is there in Huxley's cheerful assumption that science was to be the end of the Church and that men of science were to supplant the bishops?

Now these inconsistencies in Huxley are not the result of a progressive change in his views, nor are they infrequent or superficial. They lie at the very foundation of the system of which he was the most distinguished spokesman, and they are more conspicuous in him than in others merely because at any given moment his style is so eminently transparent. They spring, indeed, from a false extension of the procedure of science into a philosophy of naturalism. The fact is simply this: When the matter is squarely faced there can be no science, properly speaking, except in so far as the world appears to us a strictly closed mechanical system, a "block-universe" as William James called it, which contains its end in its beginning and displays the whole in every part. As it has been picturesquely expressed: "Were a single dust-atom destroyed, the universe would collapse." Absolute regularity

is the *sine qua non* of scientific law, and the moment any element of incalculable spontaneity is admitted into the system, that moment the possibility of scientific law is so far excluded: there is no law of the individual or the unpredictable; there is no science of the soul unless man, as Taine says, is no more than "a very simple mechanism which analysis can take to pieces like clockwork." This does not mean that any given law is final and embraces the whole content of phenomena; but it does mean that further knowledge, while it may modify a law or supplant one law by another, still leaves us within the realm of absolute mechanical regularity. Such a closed system is properly called nature; it was clearly conceived and given to philosophy by the great naturalists of the seventeenth century.

Nature, thus conceived as a block-system, is the proper field of positive science, and leads to no embarrassment so long as we do not attempt anything more than the classification of physical phenomena under laws. But there is a tendency in the human mind which draws it almost irresistibly to pass from the formulation of laws to the definition of the force or cause underlying them. This is hypothetical science. Such a procedure already involves a certain violence to scientific evidence, but it does not stop here. Suppose there exists a body of testimony, accumulated through thousands of years, to the effect that a whole world of our inner life lies outside of that block-universe of mechanical determinism: what then is the man of hypothetical science to do? He may deny the validity of any evidence apart from that which leads to scientific law, and having erected this law of mechanical regularity into an active cause governing and controlling the world, he may set it in opposition to the hypothesis of a personal God which Christians have created from the evidence of their inner experience. He may be onesided, but he will be consistent. In this sense, and with a consequence different from what he intended, Frederic

Harrison was justified in saying that "agnosticism as a religious philosophy *per se* rests on an almost total ignoring of history and social evolution." But suppose further that our scholar, having naturally broad interests and sympathies, is still importuned by all that evidence in the moral and political spheres which he could not bring into conformity with his hypothesis: what will he do? In attempting to cling to an hypothesis which is based on the exclusion of half the evidence of life, while at the same time he feels the appeal of the whole range of evidence, he will try to develop that hypothesis into a complete philosophy of life, and in doing so he will necessarily fall into just those inconsistencies which strike us over and over again in Huxley. He will become a victim of that huge self-contradiction which I have called philosophical science.

Now we all know how completely this sophism took possession of England and the world about the middle of the last century. In particular the magnitude of Darwin's work in the field of positive science and the superb simplicity of his explanation of the whole order of existence, including man, as the product of a mechanical law of selection, easily imposed the evolutionary hypothesis as a lawgiver upon education and morals and religion and government. And to the authority of Darwin was added the persuasiveness of Huxley's masterly skill as lecturer and writer. It seemed to the men who heard his voice as if the long obscurity that had involved human destiny was to be rolled away, as if at last the pathway of truth had been found, and the world's great age was about to be renewed. And however we may now see the inconsistencies and feel what in another man might be called the duplicity that underlay Huxley's method of attack and defense, there was enough of the stuff of positive science in his doctrine to give it a certain moral stiffness and intellectual rigor which must always claim our admiration. But with the passage of years a change has come upon philosophical science. The

human mind could not long rest content with a system which was so glaringly at war with itself, and indeed there are signs that Huxley himself was not always satisfied with his position. But where lay the way of escape? These men would not willingly give up the authority which seemed to be derived from the actualities of positive science, yet they began to see that the hypothesis of a block-universe had brought them to an absolute *impasse*. The history of the intellect since the days of Darwin's supremacy, therefore, has been marked by an attempt to preserve the facts of evolution as the basis of a scientific philosophy, but to alter the evolutionary hypothesis so as to bring it into harmony with the spontaneous part of human nature. The process has widened the distance between positive science and philosophical science; it has introduced a new set of inconsistencies, not to say absurdities, into thought, but it is extremely interesting for the way in which it has finally brought together two currents of the nineteenth century that might have seemed to a superficial observer the very opposites of each other. What appeared in Huxley's time, and still more in the half-century preceding him, to be the very bulwark against those laxer principles and tendencies which may be grouped together as romantic, has gradually thrown off its hard rationalism, until now in our day philosophical science and romanticism are actually merging together and becoming almost indistinguishable. In place of Huxley we have William James and Bergson. The change is significant and worthy of analysis, for the true meaning of a movement is known by its end. So much we may learn from Pragmatism, even while criticizing it.

Nor is it difficult, if we regard the material and moral forces from which science and romanticism respectively take their start, so see how these two apparent enemies have come to join hands in a truce if not in an alliance. We do not often stop to reflect on the world of pain and horror which underlies this surface of things on which we move so comfortably. Only

now and then some accident, some physical rebellion as it might be called, sets loose the pent-up demonic powers, and for a moment life is as it would be if in a madhouse the phrenzied patients were to break their fetters and overcome their keepers. Each force of nature in itself seems to be limitless in its potential activity, and in so far as it is unchecked or unbalanced by some other force becomes the source of ruin to mankind. Manifestly that orderly subordination which is the condition of our physical well-being depends on some principle of control and balance which is not inherent in the individual forces of nature. Furthermore, if our horror at these calamities, if the physical repugnance that lies always concealed in our breast, have any meaning, it is in the testimony they bear to a certain correspondence on the one hand between our sense of moral evil and the destructive limitlessness of any natural force in itself, and on the other hand between our sense of moral justice and the imposition of order and subordination upon those forces. We are thrust by our emotions into an absolute dualism. Now the point to consider is that pure science deals with these forces in themselves and as unlimited, and without any thought of such human distinctions. A little spark kindles a fire, and instantly the flames sweep over a city, consuming life and property and spreading everywhere destruction and terror. Yet with this terror science has nothing to do; it is concerned with the laws of heat. Again some movement takes place within the earth; the crust on which we walk is rent and shaken, and the helpless human creatures are killed and mutilated as ruthlessly as the ants in their little mound over which we inadvertently stumble. Yet with this hideous fear science has nothing to do; it is concerned with the laws of motion. Nor is the human body itself free from these incursions of uncontrolled energy. One very close to us, one whose fragile beauty has filled us with a long apprehension of love, is seized by a loathsome disease; those lower forms of life which to our vanity we seem to have

trampled down in our progress have suddenly risen up like avenging furies and laid their obscene grip on what was dearest and fairest to us. We look on in an agony of suspense, as if in this precious body the very armies of good and evil were at war. Yet all the while the physician watches with impassive, critical eye, studying symptoms, applying remedies, awaiting calmly the results: his very efficacy as a man of science depends on his freedom from those emotions which are tearing at our heartstrings; he is concerned with the laws of parasitic life.

Science is properly the servant of our emotions and of the corresponding sense of dualism, but in its method of work it not only ignores our emotions, but can perform its true service only so long as it ignores them and deals with the pure forces of nature. The error and danger arise when it disdains to be a servant and sets itself up as mistress, raising its means into an end and its procedure into a philosophy. Moved by our importunate consciousness of order and disorder, yet bound in its hypothetical explanation of evolution to consider the forces of nature alone, without the admission of any law of control outside of them, it has come gradually to a conception of the world as an entity containing within itself some force of vitalism, some *élan vital*, which by its inherent limitlessness is the source of constant creation, making the sum of things actually greater to-day than it was yesterday and, from our human point of view, more orderly. Sheer expansiveness becomes the law of physical life. The acceptance of this hypothesis of an incalculable energy, whose action to-day can in no wise, or only imperfectly, be predicted from its action yesterday, might seem to evict the very possibility of scientific law; but there are two things to consider. In the first place this hypothesis is just an hypothesis and has little or no relation to the actual work of positive science. And in the second place it seduces the scientific mind by seeming to get rid altogether of that dualism which is ignored in

scientific procedure. As a matter of fact it merely changes the character of that dualism by setting the two terms apart at the beginning and end of time instead of regarding them as existent together and independent of time.¹

From this rather slippery hypothesis of a universe in the process of continual self-expansion it is but a step to the modern scientific philosophy of human progress as depending, not on any ideal outside of evolution, but as—what shall I say?—as self-causative. Here precisely enters the point of connection between philosophical science and romanticism;² but to understand its full meaning we must look back into the sources of the second member of the alliance.

Now, in attempting to characterize the historic romanticism of the nineteenth century, the first trait that is forced upon our attention is the note of rebellion from the classics. That hostility between romanticism and classicism is fundamental: we cannot escape it. Greek philosophy, as it touches upon human conduct and as it was handed down to the modern world, was summed up in the *Nicomachean Ethics*, at the very heart of which lies the classical distinction between the infinite, as the absolute, and the limitless. According to Aristotle

¹ The middle term between the hypothesis of a purely mechanical evolution and the hypothesis of evolution as conceived by Bergson may be found in the evolutionary monism of Hæckel, which has been beautifully analyzed and demolished by M. Émile Boutroux in his recent work, *La Science et la Religion dans la philosophie contemporaine*.

² This union was clearly foreshadowed in Diderot; it was developed by Comte; but its great authority could not come until after the work of Darwin. In one of his essays Huxley speaks with scorn of Mr. Frederic Harrison's Positivism, and asks: "What has Comtism to do with the 'New Philosophy' [*i.e.*, the philosophy of science]?" Mr. Harrison might easily have retorted. In fact when Huxley boasted that the bishops were to be replaced by the "new school of the prophets [*i.e.*, men of science]" as "the only one that can work miracles," and when he acknowledged that "the interests of science and industry are identical," he was merely repeating Comte's early theory of the supplanting of the priest and the soldier by the man of science and the man of business.

the active nature of man is made up of desires, or impulses (*ἐπιθυμίας*), which in themselves are incapable of self-restraint and therefore limitless (*ἄπειρος γὰρ ἡ τῆς ἐπιθυμίας φύσις*, *Pol.*, II, 4; the translation of *ἄπειρος* in Greek generally as "infinite" instead of "limitless" has been the source of endless confusion of ideas). Furthermore this limitlessness is of the very essence of evil, whereas good in itself may be defined as a limit (*τὸ γὰρ κακὸν τοῦ ἀπείρου τὸ δ' ἀγαθὸν τοῦ πεπερασμένου*) and the aim of conduct is to acquire that golden mean which is nothing other than a certain bound set to the inherent limitlessness of our impulsive or desiring nature. The determination of this bound in each case is the function of reason, which embraces the whole existence of man as an organism in his environment and says to each impulse as it arises, thus far shalt thou go and no further. But as the basis of practical life is the limitless sway of unrelated impulses, reason, to establish its balance and measure, to find, that is, its norm of unity, must look ultimately to some point quite outside of the realm of impulse and nature. Hence the imposition of the theoretical life, as Aristotle calls it, upon the practical — the contemplation of that absolute unity which is unmoved amid all that moves. This unity not of nature is the infinite; it is the very opposite of that limitlessness which is the attribute of nature itself; it is not a state of endless, indefinite expansion, but is on the contrary that state of centralization which has its goal in itself (*παρ' αὐτὴν οὐδενὸς ἐφίεσθαι τέλους*).

The revolt from this essential dualism of classical philosophy began in the seventeenth century. That age was notably a time of confused thinking and of reaching out in many directions. But at its beginning, and always in the background, lay a certain mode of regarding life, the orthodox mode of supernaturalism. On the one side was the great flux of nature, embracing in its endless activity the heart of man and the phenomenal world. "The sea itself," says Bossuet, "has not more waves when it is agitated by the winds than are the

diverse thoughts that rise from this abyss without bottom, from this impenetrable mystery of the heart of man." Within this chaos of the human breast sat reason as a kind of king or arbiter, by its command bringing order out of disorder. But reason itself, as understood by the characteristic minds of the age, belonged to nature, and was a sufficient guide only so long as it listened to the voice of a restraining power above and outside of nature. The true division was not between reason and instinct or desire, but between all these together, as forces of nature, and superrational insight. That is to say, the orthodox view of the seventeenth-century was the classical dualism which had become involved and obscured in a vast system of Christian mythology and theology. The irremediable fault, default one might say, of the age was that it never attained to a clear and untrammelled definition of the superrational insight upon which its faith was based. Pascal, indeed, approached such a definition when he set the heart over against reason and concupiscence, meaning by heart not so much the desires and emotions, as the contrast with concupiscence plainly shows, but that faculty by which we intuitively apprehend the infinite and eternal. Yet even in Pascal this faculty of intuition was never freed from the bondage of revelation and questionable authority, while in most of his religious contemporaries it was inextricably confused with some external voice of the Bible or the Church. Not many men to-day have the patience to read far in the endless theological literature of that age; and with reason. It is the curse of the Reformation that the search for truth was largely diverted by it into a monstrous and deadening discussion over the particular instrument or institution to which the truth was supposed to be once and for all imparted as a sacred deposit. He who is willing and strong to read those mighty books may be fortified in his own soul by feeling that the tremendous earnestness of this war over authority must have implied, beneath all the battle of words, an equal

earnestness over the truth for which the debated authority was supposed to stand. But the actual result of that debate was to weary and bewilder the mind of contemporary men. Gradually the whole question of traditional authority, and with it the higher intuition which had been so obstinately identified with this authority, begins to lose its hold, and in its place comes the new reign of naturalism.

Now naturalism is precisely the denial of any revealed authority or supernatural intuition whatsoever. For the government of the fluctuating element of nature it looks to reason alone, which it recognizes as but another, if higher, aspect of the same nature. Hence the dominant philosophy of the eighteenth century was a rationalism, which in religion denied, or at least minimized, all that is mysterious and escapes the net of logic, and in science regarded the world as a vast machine which can be perfectly expressed in a mathematical equation. Literature followed the lead and became rational and pseudo-classic. I would not exaggerate the regularity of this development, for, after all, the human mind remains always essentially the same and varies only as one or another element comes uppermost. And in particular any comment on the pseudo-classic literature (which in itself has many comfortable excellences) should not fail to distinguish the truly Augustan circle of Butler and Johnson and Reynolds and Goldsmith and Burke, whose humanism, like that of Horace, contained, not so much explicitly as in solution, the higher insight which the philosophy of their age was so busily hiding away. They contained, that is to say, some marks of true classicism as contrasted with pseudo-classicism. Nevertheless the main current of the times was evident enough, and on its surface carried religion and science and literature in a compliant brotherhood.

Johnson and his school belonged essentially to the main rationalistic stream of the age, though in some respects they surpassed it. But by their side there was springing up another

school, equally a child of naturalism, but hostile to what may be called the official philosophy. Naturalism acknowledged both the reason and the instincts or emotions as belonging to the nature of man, and thus manifestly left the door open to a revolt against the tyranny of one element of nature over the other. Accordingly, almost with the beginning of rationalism we see springing up, timidly and uncertainly at first, various forms of appeal to pure instinct and unrestrained emotion. This voice of insubordination first became clear and defiant and fully self-conscious in Blake; and the message of Blake, repeated in a hundred various notes, now tender and piercingly sweet, now blurred by strange rumblings of thunderous madness, is everywhere a summons to the perfect freedom of instinct and primitive emotion and a denunciation of the control demanded by reason or by authority of any sort:

Those who restrain desire, do so because theirs is weak enough to be restrained; and the restrainer or reason usurps its place and governs the unwilling.

The road of excess leads to the palace of wisdom.

He who desires but acts not, breeds pestilence.

These epigrams are from *The Marriage of Heaven and Hell*, a book which Swinburne was to rank "as about the greatest produced by the eighteenth century in the line of high poetry and *spiritual speculation*," and which to Mr. Arthur Symons was an anticipation of Nietzsche: "No one can think and escape Nietzsche; but Nietzsche has come after Blake, and will pass before Blake passes." Now Swinburne and Mr. Symons were indubitably right in seeing in such passages as these the very bible of romanticism, and Blake's place as an expositor of that movement, for England at least, is coming to be generally admitted. But in holding up Blake's revolt against reason as *spiritual speculation* they, and others, have fallen into the error which, as it seems to me, has made of romanticism the source of endless illusions.

In the field of the imagination the school of Blake at the last carried victory with a high hand over the pseudo-classic and humanistic writers, and the nineteenth century opens upon a world pretty well divided between the quarrelsome twins of rational science and irrational romanticism. In so far as the romantic imagination yields to the self-sufficiency of instinct and emotion it implies a real revolt from rationalism; it is in a way even more hostile to rationalism than the classic use of the imagination, for classicism never involved a rejection of the reason, though it differed from pseudo-classicism by leaving the door open to an intuition above reason. But the peculiar tone of romantic writing comes not so much from the mere revolt against pseudo-classicism as from *the illusion that this revolt is a return to spiritual insight*. Here I am treading on slippery ground, and it behooves me to walk warily. That all the spiritual aspirations of the nineteenth century were of a bastard birth, only a very ignorant or willful man would assert. Humanity is larger than any formula, and no age can be limited by a label. In the romantic literature that unfolds from Blake there is much that is simply true, much that is beautiful and magnificent, and there are moments that express the divine awe that belongs to the sudden inflooding of the veritable other-world; but in the most characteristic moods of that literature, when it expresses most perfectly the main current of the age, there will be found, I believe, a deep confusion of ideas which results from assimilating the rebellion of the lower element of our nature with the control that comes from above nature. For the infinite spirit which makes itself known as a restraining check and a law of concentration within the flux of nature, this new aspiration of liberty would substitute the mere endless expansion which ensues upon the denial of any restraint whatsoever; in place of the higher intuition which is above reason it would commit mankind to the lower intuition which is beneath reason. This illusion of the senses has dazzled the human mind in other

ages as well as in the present. It shows itself here and there in the classics of antiquity. It developed a special form in the Alexandrian union of Oriental religion and Occidental philosophy, and was thus passed on to the Middle Ages. It can be found in the seventeenth century beside the true insight. It assumes many disguises and is often extremely difficult to distinguish from the supreme disillusion. The very fact that the same word, *romantic*, is used to designate the wonder of the infinite and the wonder of the limitless shows how easily we merge together these extreme opposites. But the historic romanticism of the nineteenth century, when it strikes its central note, whether it be the morbid egotism of a Beckford, or the religious defalcation of a Newman, or the æstheticism of a Pater, or the dregs of naturalistic pantheism seen in a Fiona Macleod, or the impotent revolt from humanitarian sympathy of a Nietzsche — this romanticism is in its essence a denial of classical dualism and an illusory substitution of the mere limitless expansion of our impulsive nature for that true infinite within the heart of man, which is not of nature and whose voice is heard as the inner check, restraining, centralizing, and forming.

If romanticism is thus rightly defined, its point of contact with science is easily marked. Those limitless forces which were raised into the scientific hypothesis of a self-evolving, or rather self-creating, universe are the exact counterpart* in outer nature of those limitless desires or impulses in the heart which are the substance of the romantic illusion. They find their union in that very modern philosophy of life which may be called indifferently scientific or romantic. As it is concerned with conduct and the inner life rather than with material phenomena, it may be regarded as the offspring of romanticism; as it enjoys its great authority from a supposed connection with the actual discoveries of physical law, and has obtained its precise character from the evolutionary hypothesis, it may with equal propriety be regarded as the bastard off-

spring of science — as, in a word, the latest form of philosophical science. The keynote of this new philosophy, whether it take one of the many forms of Pragmatism or express itself in the evolutionary language of M. Bergson or conceal itself in the sardonic indifference of the man in the street, is a kind of *laissez-faire*, a belief that, as the physical world has unrolled itself by its own expansive forces, so human society progresses by some universal instinct, needing no rational and selective guidance, no imposition of moral restraint, no conscious insight.

And mark well, we are here concerned not with an idle question of the schools, but with a very real outcome in conduct. You will find the trace of this philosophy in every department of life. It has remolded our whole practice of education; and this perhaps is the point where its influence is clearest and where attack may be most successfully directed. Perhaps we do not often stop to consider the relation between the usurpation of purely scientific studies in our college curriculum with the Rousselian notion that education must place no restraint upon the child, but must merely help him to expand in the direction of his emotional instincts; yet in reality that relation is to-day the main factor in shaping our pedagogical theories. Positive science is a noble vocation, but just so sure as it is made in considerable part the basis of education, instead of being treated as a profession, like law or medicine, to be taken up after a general education, just so surely the confusions of philosophical science will follow and claim authority in our schools. The unhampered elective system, which is merely the pedagogical form of the new philosophy of *laissez-faire*, is in a way anything and everything; but one characteristic and one result of it are omnipresent. It is characterized by a revolt from Greek and Latin, due in part no doubt to such subsidiary causes as the pedantry which laid its paralyzing hand on classical instruction, but due more essentially to the hostility between the classical

way of viewing life and the new juncture of romantic and scientific philosophy. The result of the modern system is a laxity of mind in those who have drifted through our institutions from kindergarten to university, a repugnance for good reading, in a word, that lack of real education which is more and more deplored by instructors in school and college.

In politics the spirit of *laissez-faire* shows itself in the feeling that to be right we need only follow unhesitatingly the clamor of the day; whereas any suppression of a self-assertive movement in favor of a saner ideal already established is denounced as reaction and death. Take, for instance, our attitude towards socialism. Perhaps no comment is more frequently on the lips of the man in the street — that mysterious arbiter of civilization — than the words: It is bound to come, why strive against it? As a matter of fact socialism, in some very imperfect form, may indeed come, but is by no means bound to come. To say that the whole teaching of history proves its necessity is to forget most of the chapters of that book, and is to fall into the common error of the half-educated who extend their knowledge of one age over all ages. I cannot see much difference between those who accept some form of socialism because by the very definition of Karl Marx it is a "fatal necessity," and those who accepted the old scholastic notion of God, with all its consequences, because by their own definition of God he must exist. The question here, however, is not the goodness or evil of socialism in itself, but the perilous state of any society which for some blind law of evolution surrenders its right to criticize and to determine its own course rationally. "Man," says M. Georges Sorel, the philosopher and for a time one of the leaders of the "syndicalist" branch of socialism in France — "man has genius only in the measure that he does not reflect." And when asked what new form of government should be erected on the ruins of society brought about by the general strike, M. Sorel

replied that with such constructive thought for the future we had nothing to do; we had learned from Bergson to trust ourselves implicitly to the blind instinctive forces of nature.

In like manner in regard to female suffrage: we deceive ourselves if we suppose that its admission or rejection will be the result of argument and rational conviction. The power that is bringing it into practical life is the sentiment heard from the mouth of every other man you meet: If the women want it, why, let them have it. And this sentiment finds support in the weary fatalism of the day: It is bound to come whether you like it or not; why resist the irresistible? Again, the question is not whether female suffrage is a good or an evil thing in itself, but the ignoble abdication of judgment in accepting any present tendency as a fatal force which it is useless, if not wrong, to curb.

And so, to pass to quite another field, the *laissez-faire* of philosophical science is beginning to modify our whole treatment of crime. We no longer punish the criminal as a being responsible for his acts, under the belief that there is in man a voluntary power to shape his own character, but when we punish him at all, we do so apologetically, as if society and not he were the guilty party, and as if his crime were merely one of the products of evolution, like any disease to be cured by fresh air and flattery. I have no desire to enter into the intricacies of the new penology. But I have been impressed by two opinions from very diverse sources. I recall reading in one of the books of that connoisseur of the underworld, the late Josiah Flynt, the remark of a professional burglar to the effect that the only prevention against crime was sure and sharp punishment. And I connect with this observation the recent statement of the Police Commissioner of New York, to the effect that the excess of violence and lawlessness in this city is due to the number of suspended sentences and the general feeling among those criminally disposed that the courts will not convict. Mr. Waldo may have had various reasons

for offering such an apology for his department, but it is significant to compare certain statistics of New York with those of London where the older habits of swift and relentless judgment still prevail. In our American city the average annual number of murders for the years 1908-10 was one hundred and seventeen, while the average number of convictions was only twenty-five. In London, with its population of seven million, the average for those years was twenty murders, for which fifteen persons either committed suicide before police action or were convicted.¹ Among the causes for this alarming disproportion our evolutionary attitude towards crime is certainly not the least effective. In the end this whole phi-

¹ The following statistics from a leading article in the London *Nation* of March 30, 1912, entitled *The Breakdown of American Justice*, give a wider range to the question: "Since 1885 there have been some 177,000 murders and homicides in the United States, but under 3000 executions. In 1885 the number of murders was 1808; in 1895 it had risen to 10,500; in 1910 it stood at 8975. In 1885 the number of executions was 108; in 1895 it was 132; in 1910 it was 104. Roughly speaking, Americans are now killing one another at the rate of over 9000 a year. Looking over the statistics of the past seven-and-twenty years, one finds that, while executions have remained virtually stationary, murders and homicides have multiplied five-fold. In 1885 for every murderer executed seventeen murders were committed; in 1895 the proportion was one to seventy-nine; in 1910 it was one to eighty-six. There are, indeed, few crimes of which an American can more safely be guilty. If he commits a murder the odds are more than three to one against his ever being brought to trial; they are more than ten to one against his being sentenced to imprisonment; and, as has been said, they are more than eighty to one against his suffering the extreme penalty of the law. Those are the chances officially ascertained from official statistics, and they apply to the country as a whole and to all its people. But it need hardly be said that if the murderer is a white man the odds in his favor are very much above the statistical average, and very much below them if he is a negro. Only one country in the world, Mexico, exceeds the American record of murders, a record that is proportionally five times as great in the United States as in Australia, more than fourteen times as great as in England and Wales, eight times as great as in Japan, ten times as great as in Canada, and about twenty-five times as great as in Germany."

losophy of naturalism, which bids us follow the lead of some blind self-developing instinct, is subject to the rebuke uttered by Bishop Butler long ago: "A late author [Wollaston] of great and deserved reputation says, that to place virtue in following nature, is at best a loose way to talk. And he has reason to say this, if what I think he intends to express, though with great decency, be true, that scarce any other sense can be put upon those words, but acting as any of the several parts, without distinction, of a man's nature happened most to incline him."

In these practical and, perhaps, debatable applications we may seem to have got far away from the man whom I upheld as the typical spokesman of philosophical science. In fact the rational hypothesis of evolution as proclaimed by Huxley was, superficially considered, the very opposite of the confessedly anti-rational hypothesis that lends authority to the doctrine of moral *laissez-faire*. Nevertheless their parentage is certain, and even in Huxley hints of the derived philosophy are not infrequent.

In education, though Huxley's interests were too broad and in some respects too literary to permit a harsh condemnation of humanities, yet all his energy was devoted to introducing science into the curriculum of the universities and schools. No doubt his action was justifiable to a certain extent and redounded to the genuine profit of pure science; but it had also the negative result at least of starting that transformation which has made of our classrooms a nursery for the sophisms of philosophical science. He was convinced that the sciences in themselves are sufficient for a liberal education, and on occasion he was ready to commend a foundation which made "no provision for 'mere literary instruction and education,'" meaning by this "the ordinary classical course of our schools and universities." Biology, he thought, included really the whole philosophy of life; and education he limited to "instruction of the intellect in the laws of nature."

If there was apparent liberality in his extension of these laws of nature to include "not merely things and their forces, but men and their ways," there was also in it the germ of a mischievous ambiguity.

In matters political Huxley's practical sense of affairs kept his judgment clearer, and I do not know that there is anything in his writings which contradicts his expressed fear and dislike of "*regimentation* and *individualism* — enforced Socialism and Anarchy." He has ringing words of rebuke for the whole policy of drifting (see, for instance, his letter of March 21, 1886, to a Member of Parliament). Yet the real tendency of his ideas comes out plainly enough in his attitude towards female suffrage. He was himself strongly opposed to the admission of women into politics, holding for biological reasons a sharp distinction between the spheres of the two sexes. Nevertheless, when he came to deal directly with the emancipation of women his method was that of the man in the street. "Let them have a fair field," he said, "but let them understand, as the necessary correlative, that they are to have no favour. Let nature alone sit high above the lists, 'rain influence and judge the prize.'"

The new romantic philosophy of evolution as a continuous process of self-creation had scarcely arisen to perturb the rationalism of Huxley, and he was too stalwartly intellectual to have succumbed to it even if it had been in the air; yet the outcome of his teaching was that exaltation of science which laid the minds of the next generation open to its alluring seduction. The final influence of his words, if not always his avowed intention, was to establish the new law of progress: *Let nature sit high above the lists*; which may be interpreted by his own remark on another occasion: "The best way of getting disorder into order [is] to let it alone." Not many lives in the Victorian era were more unselfish than his, not many men pursued truth with a nobler devotion, not many had broader and finer interests; nevertheless, in the end it

must be said, sadly and reverently, that his legacy to mankind was confusion of ideas and relaxation of judgment.

We have seen the triumphs of Huxley at Oxford, the seat of his enemies. Let us take leave of this somewhat ungrateful theme by calling up another scene at the same university. In 1864, there was a Diocesan Conference at Oxford. There chanced at this time to be in the neighborhood a man who was neither priest nor scientist, a man given to absurd freaks of intellectual charlatanry, yet showing at times also such marvelous and sudden penetration into the heart of things as comes only to genius. It was Disraeli. "He lounged into the assembly," so the scene is described by Froude, "in a black velvet shooting-coat and a wide-awake hat, as if he had been accidentally passing through the town. . . . He began in his usual affected manner, slowly and rather pompously, as if he had nothing to say beyond perfunctory platitudes." And then, turning to the presiding officer, the same Bishop Wilberforce whom four years earlier Huxley had so crushingly rebuked, he uttered one of his enigmatic and unforgettable epigrams: "What is the question now placed before society with a glibness the most astounding? The question is this: Is man an ape or an angel? I, my lord, am on the side of the angels." The audience, not kindly disposed to the speaker, applauded the words as a jest; they were carried the next day over the whole land by the newspapers; they have often been repeated as an example of Disraeli's brilliant but empty wit. I suspect that beneath their surface glitter, and hidden within their metaphor pointed to suit an Oriental taste, these words contain a truth that shall some day break to pieces the new philosophy which Huxley spent his life so devotedly to establish.

EDUCATION FOR EFFICIENCY¹

EUGENE DAVENPORT

It is dangerous to attempt to educate a live boy
with no reference to the vocational.²

THE first general principle to be recognized is this: That industrial education cannot be considered by itself alone any more than industrial people can live alone. It is at best but part of a general scheme of education that aims at a higher efficiency of all classes of people, and it is in this light that industrial education should be studied and its problems solved.

The most significant educational fact to-day is that men of all classes have come to look upon education as a thing that will better their condition; and they mean by that, first of all, something to make their labor more effective and more profitable; and second, they mean something that will enable them to live fuller lives. They have no very clear idea of the methods for bringing it all about, nor have they any very good means of impressing their views and desires upon us at educational conventions; but to better their condition through education is the abiding faith and purpose of all men everywhere, and they will persist until it is realized.

The ruling passion of the race to-day is for education; and colleges and schools of all sorts, both public and private, day classes and night classes, winter and summer, are filled to

¹ From *Education for Efficiency*; copyright. Reprinted by permission of the author and of D. C. Heath and Company.

² This chapter covers the general line of thought developed by the author in an address at the dedication of the new agricultural building at the University of Tennessee, Knoxville, May 28, 1909.

overflowing. The only educational institution that is being deserted is the old-time district school, and that is failing only where it is unable to satisfy the new demands, and where this occurs its lineal successor is the public high school, which is everywhere becoming the favorite agency of modern education of the masses in America.

The training of the young for the duties of life is no longer left to the charity of the church nor to private endowment, however munificent.

We do not ask a man to pay the expense of his own education, and we no longer require the parent to pay for the school of his child. We have come to recognize that in the last analysis the child belongs to the community, and public welfare requires that he be educated. So we have the policy of universal education well established among us and the largest item of public as well as of private expense is for schools.

Now this is not sentiment, it is business; it is not charity, it is statesmanship. We propose to maintain all sorts of education for all sorts of people, and to keep them in school as long as we can — so far have we gone already in this worship of the idol of our day and time.

Yes, truly the ruling passion of the race is for education. Individuals would amass wealth; individuals would exert influence and power; individuals would live lives of luxury and ease, but the common purpose of the masses of men from all the walks of life is a set determination to acquire knowledge. Daughters of washerwomen graduate from the high school, and ditchers' sons go to college — not by ones and twos, but literally by hundreds and thousands, and if the ruling passion fails in individual cases, we have a law that puts the child into school, willy-nilly, on the ground that to this extent, at least, he is public property.

Now what is to be the consequence of all this? What will the daughter of the washerwoman do after she has graduated

from the high school? Will she take her mother's place at the tub? What think you? If not, how will the washing be done? and was her schooling a blessing or a curse to the community? — because the tub must stay; and if she does take her place at the tub, was her schooling a blessing or a curse to her? Will the ditcher's son inherit the father's spade? and if not, how will ditches be dug if all men are to be educated? How will the world's work get done if education takes men and women out of useful and needful occupations and makes them over into pseudo ladies and gentlemen of leisure? How, too, will their own bills be paid except they labor as men have always labored? It is idle to say that a portion of the race should be left ignorant that they may perform the undesirable though necessary labor. The "portion" objects, and what are we going to do about it? Now these are disagreeable questions, and we would rather not be forced to answer them; but they are fundamental, and will soon begin to answer themselves in some fashion under our system of education, which is rapidly becoming universal.

We are now engaged in the most stupendous educational, social, and economic experiment the world has ever undertaken — the experiment of universal education; and whether in the end universal education shall prove a blessing or a curse to us will depend entirely upon our skill in handling the issues it has raised for our solution. We have entered too far upon this experiment ever to retire from it, even if we desired to do so, which we do not; and if the outcome is to be safety and not anarchy, and if it is all to result in further development of the race and not in retrogression, then a few fundamentals must soon be clearly recognized and brought into and made a part of our educational ideals, policies, and methods.

First, if we are to have universal education, it must contain a large element of the vocational, because all the needful activities must be maintained in the educated state as heretofore. The race cannot progress any more in the future

than in the past except by the expenditure of large amounts of human energy. This being so, education cannot be looked upon as an avenue to a life of ease, or as a means of giving one man an advantage over another, whereby he may exist upon the fruit of that other's labor and the sweat of that other's brow. It might do for a few; it cannot do for the mass, whose efficiency must be increased and not decreased by education; because in the last analysis education is a public as well as a personal matter, and the interests of the state require that the ratio of individual efficiency in all lines shall be constantly increased.

Second, within the limits of needful activities one occupation is as important as another, and a system of universal education must enrich them all, or the end will be disastrous. We need to change our views concerning what have been regarded as menial employments. In the millennium no woman will make her living over the washtub, nor will she sing the song of the shirt day and night forever; but neither will education and elevation free her, or any one else, from a fair share of the drudgery of life, because the needful things must still be done. Nor must we fail to remind ourselves that not all the labor of the world is at the washtub, or at the bottom of the ditch, because success in any calling is the price of unremitting and exhausting toil, against which education is no insurance whatever. It can only promise that faithful labor shall have its adequate and sure reward. And that is enough, for no man has a right to ask that he be freed from labor on this earth; he can only pray to be relieved from the burden of aimless and fruitless drudgery — which is the blessed assurance of education.

While education is no relief from labor, or even drudgery, it ought, however, to lessen the totality of drudgery by the further utilization of mechanical energy and the more economic and intelligent direction of human effort. Education will never fully justify itself until this shall have been

accomplished and the human machine be liberated from the last form of slavery—the drudgery that is born of ignorance.

No man, then, educated or uneducated, has a right to be useless. Most men will continue to earn and ought to earn, in one way or another, the funds to pay their bills, and in this natural way will the world's work get done in the future as in the past. The education of all men, therefore, is, or should be, in a broad sense vocational, and the so-called learned professions are but other names for developed industries. In this broad sense every useful activity is included, from farming to music and painting, poetry and sculpture; from engineering to medicine and law, philosophy and theology; as wide and as varied as the activities and capacities of the human race — so wide and so varied must our education be if it is to be universal and be safe.

Measured by this standard, farming has the same claims upon education as have language and literature, but no more; for both are useful, or may be, though in different ways. Which is more useful we cannot tell any more than we can tell whether food or religion is the more essential to human life; or whether art or industry contributes most to its fullest development. We only know that all things within the range of human capacity are useful, and that education may, if it will, enrich them all.

Now this demand is right, for, unless universal education can be so administered as not greatly to disturb the relations of needful activities, it will prove in the end a curse instead of a blessing, and it is the business of educators now soberly to consider the consequences of headlong policies, however promising in direct results, if they do not reckon with the inevitable outcome.

Third, in the working out of these plans such policies and methods must be observed as shall prevent social cleavage along vocational lines. Unless we can do this, democracy will, in the end, fail. We cannot go on with one half of the

people educated and the other half ignorant, any more than we could live with one half free and the other half slave. No more can we live with one half educated to one set of ideals and the other half to another. If we attempt it, we shall have, in due time, not civilization — but a tug of war between highly educated but mutually destructive human energies. The only safety for us now is in the education of all classes to common ideals of individual efficiency and public service along needful lines and with common standards of citizenship. To this end the individual must have training, both vocational and humanistic, and it is better if he does not know just when or how he is getting either the one or the other.

Fourth, remembering that what is one man's vocation is another's avocation, and that what is technical and professional to one is humanistic to another; remembering that all study is educational and that utility does not lessen its value; remembering, too, that much of our education comes from association and that the best of it comes in no other way — remembering all these and many other considerations well known to the thinking man, we must agree that *in a system of universal education the best results will always follow when as many subjects as possible and as many vocations as may be are taught together in the same school, under the same management and to the same body of men*. In no other way can a perfectly homogeneous population be secured. In no other way can universal efficiency be so closely combined with good citizenship. In no other way can activity and learning be so intimately united. In no other way can morals and good government be so safely intrusted to a free people.

As I see it, the greatest hindrance to the natural evolution of a single system of schools adapted to the education of all classes of our people is academic tradition which needs substantial modification in a number of important particulars.

The truth is, there is no such thing as a "general education,"

except one that fits for nothing in particular, leaving the possessor stranded without occupation or other field for the exercise of his trained activities. In so far as this type of general education exists among us, the quicker we abolish it the better. For example, it has been fashionable to speak of the courses in the arts and sciences as "general," "non-technical," or "liberal," using the terms synonymously and as opposed to the technical or professional.

Now this is inaccurate and leads to much confusion of mind. Courses in the arts and sciences are not by nature general and non-technical, because an examination of the facts will discover that most of the students taking those courses in colleges are taking them for professional purposes in preparation for definite careers, generally teaching; possibly banking, railroad administration, or the business of an analytical or manufacturing chemist or some other gainful occupation. That is to say, the courses in the arts and sciences are mostly taken as professional or vocational courses the same as are those in engineering and agriculture.

The best evidence of this erroneous use of terms is that those who make most of the distinction between the technical and the non-technical courses; those who talk most about the latter being liberal as distinct from the former; those who outcry loudest against commercializing education are teachers themselves, who are earning money like farmers. Now by what rule do we adjudge that farming is a calling and teaching a profession? that engineering is industrial and journalism liberal? that courses fitting for farming are technical and narrow, and those fitting for teaching or making chemical determinations are general and liberal? The truth is they are all alike vocational; they are all professional; they all open avenues whereby men and women earn money to pay their bills, and ninety-nine out of a hundred of those who are good for anything in any and all these courses are taking them for the same purpose, viz. to afford a congenial field of activity

whereby the individual may become a worthy and self-sustaining member of society.

The truth is that the distinction between the technical and the non-technical, the professional and the non-professional, the narrow and the liberal, does not inhere in courses of study leading to graduation, for the same subject may be either the one or the other according to the point of view of the student and the purpose for which it is taken. For example, chemistry per se is neither technical nor non-technical, narrow nor liberal. It is a great field of science. As explored and studied by an agricultural student, or by one who proposes to make his living as an analytical or a manufacturing chemist — to them it is a technical subject, while to the student of literature it becomes a non-technical and therefore a liberal subject, because it liberalizes him and broadens his outlook upon the world and helps to connect him with the farmer and manufacturing chemist. To the prospective teacher it becomes technical or non-technical; vocational or non-vocational, according as he proposes or does not propose to teach it. To the farmer, chemistry is a technical subject, and literature and history non-technical, and therefore liberal. To the teacher of history, conditions would be reversed.

Another academic reform is to get over our horror of the vocational. The old-line courses were as distinctly vocational to the learned professions as are the newer courses to the industrial occupations. The services of education to the industries of life and the ordinary occupations of men have been so recent that final adjustments are not yet made. We are only gradually beginning to learn that every useful man, educated or uneducated, has a calling and that the line between the technical and the non-technical, between the narrow and the liberal, runs across individuals, not between them. *Every properly educated man is trained both vocationally and liberally*, but one vocation is not necessarily more liberal than another except as the practitioner makes it so. To suc-

ceed in any calling requires the possession of a body of specific knowledge relating directly to that calling, mostly useless professionally to one of another calling, but far from useless as a liberalizer.

Every man, to be efficient, needs the vocational; to be happy and safe he needs the other. John Bessmer was a barber and made his living by his scissors, but meteorology was his avocation. He was the best barber I ever knew, but he talked most about meteorology. The ditcher will not ditch all his waking hours. What will he think about when he is awake and not in the ditch? Then is when his avocation, the liberal part of his education, is his comfort and our safety, for the mind is an unruly member, and if the man has no training beyond his vocation, his intellect is at sea, without chart, compass, or rudder, and the human mind adrift is a dangerous engine of destruction.

It is well that we who are bent most upon industrial training and development do not forget these considerations, and in our enthusiasm for technical instruction we see to it also that every individual has a fair share of the liberal as well, for the chief distinction of the educated man is, after all, his ability to view the world from a standpoint broader than his own surroundings.

Another relic of academic ancient history that ought to be eliminated is that habit of thought which runs in the form of set courses of study four years long. This habit of thought has stood in the way of the proper and adequate development of agriculture in our colleges, and it is now standing in the way of high-school differentiation and the development of industrial courses therein.

For example, it has been assumed without discussion that a student desiring instruction in agriculture must enter upon a set course for four years, and that unless he graduated he had somehow failed, or the course was too long. It never seemed to occur to our educational fathers and grandfathers

that perhaps the course was not adapted to his needs any more than it seems to occur to some of our contemporaries that men go to school to study *subjects*, *not set courses*, and that the benefits of our instruction are by no means confined to those who graduate.

There is nothing sacred about four years, or about a particular association of subjects. We must get over our fetish worship of what we call a "course of study" and bestow our attention upon "courses of instruction." Our somewhat uniform failure to do this has been responsible for much special and unnecessary limitation in the subject of agriculture. Let me illustrate: A good friend some months ago asked me this question: "Why do you not have a two-years course in agriculture in the University of Illinois?" I replied by asking, "Tell me first why do you have one in your university?" He replied, "Because many young men cannot, or will not stay, for a four-years course." And I said, "Then of course you have also two-year courses in the arts and sciences, and in engineering." And he said with an elevation of the eyebrows, very significant, "No, of course not." Then I said, "Why not? Do all or most of your students in the other colleges remain and complete four-year courses?" He had to answer, "No, not a third of them." I think I had answered his question, but to make sure I said, "When the other colleges of the University of Illinois find it necessary or desirable to put in two-year courses because not more than one student in three or four stays to graduate, then I suppose we shall do the same; but until then I think we shall continue to teach subjects to those who come, and bestow honors on those who have earned the usual amount of credit." Here is a good illustration of our futile efforts to hammer a new subject into line with ancient academic custom, as if graduation from something, even a two-years course, were the chief end of the schooling process.

This same old habit of thought is the bane of the high schools

to-day in their effort to serve the people. Many of them consider the limit reached when a four-years course is offered, made up largely out of old-line subjects with little or no reference to local needs, and when we talk about instruction in vocational subjects they remind us that the "course is full." This mistaken attitude on the part of too many high school men will do more than all other causes combined to force upon us a multitude of separate technical schools and destroy the opportunity of the high schools forever, because men are as firmly bent on vocational education of a secondary grade to-day as their fathers were bent on industrial education of collegiate grade half a century ago. The same forces are at work in high schools now as were at work among colleges then, and the issue will be the same. Either the high schools will expand and teach the vocational, or other schools will be established that will do it.

One good friend whom I greatly honor, because he is many years my senior, and many degrees my superior in every sense, writing me on this point, said in substance: "Your idea that all subjects needful to the life of the community should be taught in the same school is fine in theory, but how are you going to get it all into the course, and what shall be *left out*?" How this instinctive attitude of mind clings to us academic people! It is not much found except among professional educators, and with them it is one of the relics of academic ancient history, dating back to the time when the college provided a set course for all students and which, when full, was *full* in the same sense that the jug is full.

Recently the colleges have learned the lesson of the tremendous complexity of modern demands, and they are beginning to realize something of the depth and breadth of the meaning of universal education; at least that it means the education of many men for many things and by means of various materials and methods. This involves many courses in one school. It requires that colleges teach subjects rather than set courses;

and nothing is full so long as any branch of knowledge and activity remains undeveloped and men and money hold out. The colleges have learned this; it is also the lesson for the secondary schools; indeed, in a very large sense the land-grant university is the model for the public high school.

Our children look to the schools to fit them for the many duties of life. Let them not be disappointed. To this end we must construct such educational policies and employ such materials and methods as shall make the school a true picture of life outside in all its essential activities. To accomplish this we must introduce vocational studies freely, not for their pedagogic influence but for their own sake and for the professional skill and creative energy they will give the learner. We must do this, too, without excluding the non-professional either from the school or from the individual.

Take a specific instance outside of agriculture, but one which is typical of thousands of cases. There are many good families whose daughters feel the need of earning some little money during years of young womanhood between the school age and matrimony. They are good typical American girls, worthy the love and the service of any man, and sometime the hero will come. In the meantime, what?

We will suppose that the girl in question looks with favor upon stenography and typewriting as a congenial employment. Now I put the question flatly, remembering there are many like her in the same community, — shall the high school put in courses of typewriting and stenography which she may take in connection with her humanistic studies and her domestic science which she will one day need? — for this typical girl is, or should be, a prospective wife and mother. Will the school do this? or will it force her to leave her high school in order to get elsewhere this vocational training which she thinks she must have, because of temporary needs, and which the high school will not give her lest it should be suspected of commercializing education?

I am thankful that many high schools are already putting in vocational courses. May their numbers increase. It is far better to hold this girl in the high school and teach her also the things she will one day need much more than she will then need her stenography and typewriting, — it is better for her and it is better for the community than it is to force her, in early years and under the exigency of immediate needs, to abandon the greater for the less. Yes, it is better to take stenography and typewriting, telegraphy and bookkeeping into the high school than it is to drive our girls out of it even into the night schools. A proper policy at this point will save to American wifehood and American homes thousands of bachelor maids and factory girls, and do more to reduce the ratio of divorce than any other civilizing force with which we hold acquaintance.

What is true of many girls is doubly true of most boys. If they are good for anything, the impulse to be doing something definite takes hold of them early, and the only way to keep a live boy in school or to make him good for anything after he leaves it is to be certain that some portion of his curriculum relates directly to some form of business activity outside. *It is dangerous to attempt to educate a live boy with no reference to the vocational.*

The trouble has been in the past, and is yet, that our courses of instruction have been too few. We have not sufficiently distinguished between what a single individual could take and what the community as a whole ought to know. Accordingly, men seeking education have found much of the subject-matter and of the method grossly unsuited to the uses they hoped to make of it, and have either left the school, sacrificing their broader opportunity, or have stayed to the sacrifice of their efficiency.

The universities have been first to recognize this fact and to meet it. With the best of them there is no thought of a set course which every individual must take, but rather the

aim is to offer instruction in as many as possible of the branches of knowledge that interest and profit men. The result is that in these institutions few men are taking courses with a fixed sequence, but each is after the instruction which will best fit his needs, and often two men take the same subject side by side with a very different purpose and from a very different point of view.

Now the efficiency of modern university education, especially along new lines, is becoming notable, and institutions conducted upon this plan are overrun with students seeking definite instruction for definite purposes, all of which indicates the educational policy that best meets the needs of the people. Here is the cue to the general plan that should characterize the high schools, upon which educators ought to bestow some degree of special attention, because it is in the secondary schools and not in the colleges that the American people will mostly be educated.

A third particular in which we need academic reformation is this: Not only college courses, but high school courses, as well, are planned and conducted almost solely in the interest of the few who graduate, with but little reference to the masses who drop by the wayside. If our system of education is to achieve the highest results, it must recognize the natural difference in men, both qualitatively and quantitatively, and while it trains the brightest and best for the positions of most responsibility and therefore of honor, it must so shape its policy that those who for any reason cannot, or do not, remain to the limit of time, or whose academic ability is mediocre shall drop naturally into useful places for which their little schooling has somewhat definitely prepared them. Thus will our human flotsam and jetsam be lessened, and thus shall we become more homogeneous as a people. Thus too shall we be consistent, for does not our education aim to be universal?

Our high schools, or rather their constituency, are suffering

cruelly at this point to-day. The chief object in too many ambitious schools is to get on the accredited list of as many universities as possible, graduate as many students as may be, and get them into college. So intense is this purpose that in too many instances the course of study and the methods of work are inadvertently but largely shaped in the interest of those who are to graduate, though we know only too well that their ratio is small, and that of those who go to college it is still smaller.

It is time the high schools served the interests of their community first of all; and if they will do that thoroughly, the colleges will manage to connect with them on some terms mutually satisfactory. If that is impossible, then let the high school faithfully discharge its natural functions to the community that gives it life and support, and leave adjustments to the universities. The few who go beyond the high school will be abundantly able to take care of themselves *if only their training has been thorough*, and they have learned habits of efficiency. I protest against the reduction of the American high school to the basis of a college preparatory school, unless it is first built upon what is a rational education for the masses of men. We have no right to reduce, impoverish, or distort the educational opportunity of the great mass of people who depend upon the high school for their only education, in the interest of the few who go to college.

We are nearing the time when for various reasons we shall revolutionize our secondary education as we have already revolutionized our college standards. We shall offer many courses of instruction in many subjects, some vocational, others not; some vocational to certain students, not so to others, and all in the same school. We shall not be on sound ground in this matter until things are so fixed that when a boy or girl comes into contact with our school system at any point, even for a short time, he or she will at once and of necessity strike something *vocational* and also something *not*

vocational; to the end that, however soon the student leaves the system, he will carry out into life at least something which will make him more efficient at some point, and also more cultivated, because the schools have taught him something of actual life, not only in the abstract but in its application.

The greatest trouble with our educational system to-day is that it is laid out too much on the plan of a trunk line railroad without side switches or way stations, but with splendid terminal facilities, so that we send the educational trains thundering over the country, quite oblivious of the population except to take on passengers, and these we take on much as the fast train takes mail bags from the hood. We do our utmost to keep them aboard, to the end, and we work so exclusively for this purpose that those who leave us are fitted for no special calling, and drop out for no special purpose, but roll off like chunks of coal by the wayside — largely a matter of luck as to what becomes of them. I would reconstruct the policy of the system by making all trains local, both to take on and *leave off passengers*; and I would pay much attention to the sidings, and the depots, and their surroundings at the way stations, to the end that those who do not complete the journey may find congenial surroundings and useful employment in some calling along the line. I mean by this that while vocation should be neither the end nor the means of the educational process, yet it should be its inseparable concomitant. This is education for efficiency and service, whether it ever earns an academic degree or not.

We need not fear real education for real efficiency, but we may well tremble when we see a whole people gorging themselves with a mass of knowledge that has no application to the lives they are to live, for this will breed in the end dissatisfaction and anarchy. The best illustration of this educational short-sightedness is the fondness of many a classically educated colored brother for Latin, Greek, and Hebrew, not so much for what they can do for him, or help to do for him-

self or others, as because the acquisition of language is a pleasant exercise and its possession a satisfying novelty. Fortunately Booker T. Washington and Tuskegee are in the land, but unfortunately our educational blunders are not limited to the colored race. It is a notable and perhaps significant fact that a very large proportion of the tramps of the country have had the advantages of our schools.

Another point at which our minds are in danger of wandering far afield is in regard to the natural function of the secondary school. The American high school is a new institution, and like all new institutions it lacks ideals and methods. It has displaced, in the West at least, the old-time academy whose function it was to fit for college. The high school, lacking models, has followed very largely and quite naturally the plan of the academy whose mantle it has inherited. In this it has erred. *The modern high school is not the lineal descendant of the old-time academy, and its primary function is not to fit for college. It is a new institution, and its function is to educate its natural and local constituency for the duties of life. It is as thoroughly a public institution as is the state university and it should serve its community in the same way and with the same spirit that the university serves the larger and more complex unit.*

It is the first business of the high schools to serve the public needs directly through the masses of men and women who constitute their natural constituency, not indirectly through the colleges. Their service to education and to civilization is primary, fundamental, and direct, not secondary and preparatory. Nor in saying this do I reflect upon the great work of our institutions of highest learning; far from it. No man can exceed me in admiration of the supreme service of the colleges and the universities of the country, but that supreme service must be rendered without overshadowing, distorting, or injuring that other service, which, after all, is more direct, reaches a larger number, and without which the

influences of the colleges and universities will be largely dissipated and lost.

If the existing high schools will earnestly address themselves to this great duty, they will become, next to the church, the most powerful educating and elevating agencies of our civilization; but if they do not, then as sure as time passes another system of schools will arise that will do it, and the time will not be long hence until they will divide the field with technical schools and play a losing game of chance with them. The first independent schools will be trade schools in the cities and agricultural schools in the country, and this lead will be followed by others until we shall have a whole system of vocational schools of all conceivable sorts; and the high schools will be stripped, first of one opportunity to serve their constituency and then of another, until their usefulness will be lessened, if not entirely destroyed in the eyes of the people, who alone can support them, and they will be relegated to girls' schools and training schools for college admission.

This is no fanciful picture, and I am convinced that unless we are quick to read and heed the handwriting on the wall to-day the next decade or two will witness the permanent decline of the high school under the onslaught of the multitude of independent vocational schools that will spring up everywhere and which will seem to serve well because the service is direct and plainly useful. The only great future for the high school is to add vocational work, making the separate technical school unnecessary, if not impossible. If they will do this, their future and their service are assured; but if the people find it necessary to establish another system of secondary education as they did a new system of collegiate grade, then they will do it; but if they do, they will certainly insist upon a fair division of the revenues, because modern high schools are not private institutions as were the old-time colleges; they are in every sense of the term public institutions.

Experience in university circles has shown that the separate professional college was necessary in the past only because of the indifference to new demands of the institutions then existing. As soon, however, as the universities seriously set about studying the new problem from their own standpoint it was found that there was really nothing incompatible between the old and the new ideals, but rather that it took the two together to make a complete system of education, and where the two have been already joined, — the professional and the cultural, the industrial and the humanistic, — there has education flourished best in the last decade; there is the educational impulse strongest to-day, and there, if wise counsels prevail, will develop in good time the greatest educational strength and creative power of this most virile of people; not only along industrial lines, but along artistic and humanistic lines as well.

If the high schools make the most of their opportunity, they will develop into a great system capable of training the masses of our people not only industrially but for all the duties of life, and in a way that can never be equaled by any multiple system of separate vocational schools, however well established and conducted. One school with many courses, not many schools with different courses — that is the plan for American secondary education. Such a school would be large enough and strong enough to afford an excellent education within walking or driving distance of every young person — an ideal not attainable by any system of separate schools that can ever be established. I have unlimited faith in the final development of the high school, and cannot condemn in terms too strong a pessimistic or a carping spirit toward this new and remarkable system of education at the very doors of the people; and I cannot oppose too strongly any and all influences that tend to make its proper evolution either impossible or more difficult.

We must not underrate the importance of the average

citizen, either to himself or to the community, for the common man with an opportunity is a common man no longer. If we would know what a community of common people can do when it addresses itself seriously and *en masse* to a single purpose, consider the success of that little German village in breeding canaries, marvel upon the achievements in the Passion Play at Oberammergau, or even the singing of the Messiah in that little Swedish village of Kansas, as described in a recent *Outlook*.

Remembering what the common man may do, with proper ideals and advantages, there is no higher duty now resting upon all of us, and especially upon educators, than to unite education and activity by the closest possible bonds, to prevent on the one hand the acquirement of knowledge to no purpose, and on the other the development of operative skill with little knowledge of the true relations of things; to see to it that no individual shall be compelled to choose between an education without a vocation, and a vocation without an education. This supreme responsibility rests heavily upon every American community just now, and in our enthusiasm for education that is useful it is well if we temper our enthusiasm with judgment and keep always in mind the fundamentals on which all real education must rest. If this be true, it is imperative that the high school as an educational institution should take hold of and care for all the essential activities of its community; and if the clay working or some other interest develop into a separate organization with a separate plant, that it still be under the control of the high school, as the different colleges of a university are under one control, and their policies and aims, though different, are yet harmonized into a common purpose of training for actual, not apparent, efficiency.

To teach all subjects to all men in the same school — this is the great educational, social, and economic opportunity of America, where both collegiate and secondary education are

in the hands of the general public and not of any sect, class, or faction. If we throw away this natural advantage, bought with blood and treasure, or if we neglect to make the most of it, we are guilty before the nation and the race of a breach of trust second only to the sin of treason.

If we follow precedent blindly and transport that alien institution, the European trade school, and transplant it into the free soil of America simply because it is temporarily easier than to complete the system we have so splendidly begun, then shall we commit an educational blunder that is inexcusable, and we shall richly deserve the anathemas that will be ours from generations yet unborn when they come to see the handicap we have laid upon them and the natural advantages we have sacrificed.

I would have it so that the occupation of an American citizen may not be known by his dress, his manner, his speech, or his prejudices. If we can realize this ideal, it will be to our perpetual advantage, for it will insure not only our economic independence but our social comfort, our racial progress, and our national safety. If all this is to come about, we have some thinking to do now, for, as I have remarked elsewhere, more depends on what *we do now*, than can depend upon what we or others think and say and try to do twenty-five or fifty years from now.

When the materials for American educational history are all gathered, and when time enough has elapsed for its various elements to assume their true proportions and perspective, it will be found that the most significant fact in the educational movement of our day and time was the agitation that led up to the establishment of the state university.

In a very large sense the founding of that unique institution of learning introduced two new and distinctive elements into our philosophy of education, both of which bid fair to be permanent, and to control even to the extent of revolutionizing our educational ideals.

The first of these fundamental doctrines was this — that no single class of men and no single class of subjects should dominate the educational policies of this people; and the second was that in the last analysis higher education is a public and not a personal matter.

The state universities were established primarily to teach the branches of knowledge especially related to the industries of life; but their field has broadened in the doing, and their success has shown not only that learning may be useful without losing its educative value, but that all branches of learning are both useful and educative, and thereby worthy of being taught to somebody; that in the interest of the public it is the business of a school as of a university to teach more things than any single man may desire to know, and that it is the business of our institutions of learning to reflect in their laboratories and in their classrooms the life and essential activities of our civilization, at least in all its major aspects.

The other new idea introduced through the state university is that education is first of all a public rather than a personal matter. Colleges had long been maintained for the convenience of those who desired and were able to pay for an education, and those who took these courses did so with a view to bettering their condition personally. While the campaign for industrial education savored largely of personal needs and class equality in educational opportunity, yet in its working out we have discovered the deeper principle; viz. that the public is not well served until we educate freely for all useful activities, to the end that these activities shall be in the hands of educated men, under whom only will they develop and by which development only will our civilization as a whole prosper and progress. The ultimate purpose of a great system of education is and must be the development of human activities, both industrial and non-industrial, and our great demand upon the individuals that have enjoyed its

advantages is service — service in something, somewhere; anything, anywhere.

The great mass of human happiness will always arise out of doing well the common things of life, and the happiness of the individual will lie in that creative genius which does to-day the same thing it did yesterday, but does it better. All else is spice and seasoning to life, and as we cannot live on cakes and spices, so the enduring things will always be the useful things. There will be no educated aristocracy, for education will have a higher purpose than to give one man an advantage over another.

Every man's life is a comedy, a tragedy, or a symphony, according as he is educated. It was a great thing when the common man first lifted up his head, looked about him and said, "I, too, will be educated." It is our business to see to it that that high resolve shall not destroy the race, but shall still further bless it.

THE FUNCTION AND EFFICIENCY OF THE AGRICULTURAL COLLEGE ¹

WHITMAN H. JORDAN

IT would be an indication of ingratitude and inappreciation if I failed to acknowledge at this time the great honor of being elected to preside over your deliberations, an honor commensurate with the distinguished history and eminent usefulness of this association. Because it has been my good fortune to attend these meetings from their very beginning, in addressing you on this occasion I cannot be accused of speaking without knowledge and understanding if at first I refer in the spirit of congratulation to the benefits of this organization, both for those of us who have participated in its deliberations and for the institutions which it represents.

Not the least important outcome of these assemblages are the personal relations that have been established. The hand clasp that has spanned a continent has not only made possible the formation of friendships that have greatly enriched our lives, but thereby has come a sympathetic touch of laborers in the same field so essential to unity of purpose and understanding. We would all feel impoverished, personally and officially, if there were withdrawn from the sum of our life experiences the beneficent results of the intercourse that these meetings have afforded.

Because we are friends as well as coworkers, we keenly feel the absence from our midst of those who have passed out of life's activities. Two of the best beloved of our long-time associates have entered into their final rest during the year

¹ From *Science*, Dec. 8, 1911. Reprinted by permission of the author and the publishers.

that has passed. For many years these gatherings were favored by the gentle and refined presence of Matthew H. Buckham, who through a long life of activity as an educator exhibited the qualities of a scholar and a gentleman. May many rise up with a similar type of mind and character to mold the intellect and purposes of coming generations! We shall not forget the kindly spirit, the manly attributes, the singleness of purpose and the efficient service of Edward B. Voorhees, whose life and activities were on a plane so high that they presented an inspiring example of useful living. The number remaining of those who aided in founding and building these new educational agencies and who are still in active service is small, and these pioneers in an undeveloped field can but feel that they are transferring to "other men and other minds" the abundant fruit of their labors.

Again, this association has been an active and most influential agency in augmenting the resources of the institutions from which you come, and in developing and unifying their administrative and pedagogical methods. Through your accredited representatives an influence, national in scope, has been focused upon legislation. The enlarged financial support of the colleges and stations by the federal government could hardly have been secured without your united effort, directed along an authorized channel. You must also recognize very clearly that your annual discussions have been helpful, even essential, to the wise solution of administrative and educational problems. Probably no other influence has been more potent in hastening and shaping the far-reaching readjustment that has been effected during the past few decades in the aims and methods of education, even in our secondary schools, than has the example and propaganda of the institutions arising from the first Morrill act, an influence to which your deliberations have served to give form and purpose.

But the main reason for extending congratulations to you at this time is the status and beneficent results of the activities

here represented. It would be easy to show the marvelous growth of the equipment and work of the land-grant colleges and agricultural experiment stations by the use of statistics that are almost startling in their proportions. I shall not resort to this method, however, for you know the facts, and besides, the prominent display of such large figures savors of showy parade or of vainglorious pride. It is enough to say that as a whole these wards of the nation and states are liberally equipped as to buildings, apparatus and funds, with a disposition on the part of the state governments to provide for increasing demands in these directions; students are not lacking, practice both in agriculture and engineering is giving respectful attention to your utterances; all this indeed because after nearly five decades of strenuous and almost heart-breaking struggle, whatever have been your mistakes, you have demonstrated your right to exist and thereby have won public confidence. The colleges and stations for whose up-building you have labored hard and loyally are now public utilities of great importance. They are an intelligent and directive force in the conservation of our resources, both social and material. In brief, these institutions have come to be a national asset of great and permanent value.

But now that the hardships and discouragements incident to the establishment of the new and the untried are past and public confidence is won, now that you are reasonably well equipped and have the plastic minds of thousands of young men and women with which to work your will, the time has come to ask this question: Are these agencies, established and maintained by public funds, doing work of a kind and in a manner, under the conditions which have developed, that is calculated to most fully promote public welfare? No one will deny the assertion, I am sure, that the colleges were brought into existence, not for the purpose of providing a fraction of one per cent of our young men and women with a college education as an individual favor, but to be construc-

tive and conserving factors in building and maintaining a strong nation. "The community has come to be convinced that education is the most competent means for the preservation and enrichment of itself." With this end in view, is their work wisely planned and directed?

A consideration of this comprehensive question requires that we bring to mind the directions along which the colleges and stations exert their influence in the exercise of their proper functions. These directions are mainly three:

1. The public relations of educational agencies.
2. The enlargement of the body of knowledge.
3. The development of the vocational and social efficiency of the individual.

It is my purpose to direct your attention chiefly to questions involved in the college training of young men and women and the development of knowledge, but I ask your indulgence while I briefly refer to the first phase of influence which I have mentioned:

As to the influence of the land-grant legislation and its results upon the public or governmental relations of educational agencies, there can be no doubt that one of the consequences of this legislation is a strong movement toward the injection of federal aid, and the federal control necessarily, accompanying the expenditure of federal money, into secondary education that so far has been exclusively supported and controlled by the states. The concrete expression of this movement is the introduction into congress of bills providing for the annual expenditure of vast sums of federal money in aid of normal schools and high schools in the various states. The policy proposed, if made effective, would have far-reaching results and for this reason it should be considered by this body in the spirit of wise statesmanship with reference to ultimate results rather than on the basis of any immediate financial advantage that might accrue to states or institutions.

It is well for us to keep in mind this law so well formulated by an educator of long experience, "that the efficiency of public education becomes the greater as the responsibility for carrying it forward is more directly and immediately felt." This admirable expression of a sound principle may be supplemented by the statement that an efficient system of public education cannot be imposed upon a community by aid from without, but must be gradually developed from within.

Moreover, the broadcast precipitous distribution of public funds into localities where there does not exist the understanding and preparation necessary to their wise expenditure is sure to result in lamentable waste. This would be a less regrettable result, however, than the influence of outside aid upon the spirit of initiative and self-dependence of the people, in the absence of which no progress is made in any enterprise whatever. The school-district system once widely in vogue in the eastern states, where each political unit was practically a pure democracy, while expensive, possessed certain advantages of simplicity and directness because of the close relation of the citizen to the school. It was a system that gave large latitude to the individual development of boys and girls and was far removed from the mechanisms of highly concentrated systems that are inelastic and attempt to force square boys and girls through round holes. While the old system would not meet existing conditions, which, for reasons of economy, require a closer organization and a fuller concentration of authority, we should avoid, so far as possible, the dangers of bureaucracy in school administration that are by no means unreal. The injection of federal aid and authority into local educational affairs could but increase the dangers to educational freedom that always attend a highly centralized administration; and, above all other considerations in importance, such a policy is in the direction of removing the citizen too far from his direct responsibility, even through

taxation, for the maintenance of local institutions. The exercise of citizenship, involving as it should a discussion of public matters and a sacrifice of time and money, has great training value and is an essential means of attaining the civic efficiency necessary to our form of government. Have we any reason to doubt that the states will provide for advances in secondary education as rapidly as public sentiment, available pedagogical tools and opportunity will justify new movements? The progress already made in several states indicates that we have not.

There are those who declare that the advance of nationalism, even in the control of education, is irresistible. It is encouraging to note that there are already signs of an action against this movement. Whatever comes to pass, we should be warned that any readjustment of the relations of government to education which does not fully preserve the autonomy of the states, and to a reasonable degree, of localities within the states, in the administration of educational matters, would be repugnant to the spirit of our institutions, and a revolutionary and dangerous innovation.

I shall introduce the other phases of this discussion by the assertion that the chief and absorbing aim of the college, whether it be subsidized by private endowment or by public funds, should be the training of young men and women in a manner and to a degree that is consistent with well-recognized college standards. This statement, regarded by many as expressing an obvious truth, is given prominence in this connection not because there is any ambiguity in the language of the first Morrill act, which specifies very clearly the function of the proposed institutions, but because in recent years these colleges are moving with accelerated momentum towards agricultural activities, costly in time and money, that have only a remote relation to the training of their students. I refer to public addresses, farmers' institutes, reading courses, demonstration work, railroad-train instruction, fair exhibits,

secondary education and similar efforts that just now seem to be increasing rapidly in volume and in their demands.

Because many of these activities are more or less spectacular and are popular in character, they certainly attract attention and stimulate interest both in the agencies which participate in them and in the knowledge which it is sought to impart. For these reasons they are very useful. Doubtless many of us upon whom is laid the burden of administering the affairs of the colleges and stations and of securing the funds necessary for their development and maintenance regard extension work of various kinds not only as rendering a real public service, but as an efficient means of securing the public favor that insures generous support. It would be an interesting problem, psychological, ethical or otherwise, to determine in what proportions altruism and expediency enter into the motives that lie behind some of our agricultural propaganda.

But, setting aside the question of motives, there is every justification for declaring that in so far as these popular efforts, and secondary education within the college, minimize academic efficiency through the diversion or limitation of funds, through their absorption of the time and energy of teachers or through their reaction upon the atmosphere of the college and its standards of instruction, in so far the lesser is usurping the greater. It is fully recognized that this assertion is antagonistic to the view that extension work is a function of the agricultural college coördinate with, and of equal importance with, the training of young men and women, to be maintained on an equal footing as to development and permanence, and it is so meant. It may further be said that because of the strong trend towards the popularization of agricultural knowledge both within the college and station and without, because of the sweep and strength of the agricultural extension movement which is taking such diverse forms and is so largely occupying the thought and

energy of college and station leaders, there has never been a more critical period in the life of the colleges and stations or a time in which their efficiency for the accomplishment of their primal and fundamental purpose should be more carefully guarded.

The gravity of the situation is augmented by the fact that the agricultural and business interests of the country, alive to the value of our worth, are now proposing to us what we shall do and are urging upon us not only efforts of our own, but our active support of new efforts that are outside our province, but to which we are expected to sustain relations of advice and aid. These suggestions, which sometimes are almost equivalent to demands, are certainly made in the spirit of good will and helpfulness and are always worthy of our most respectful and careful consideration, but it is seriously to be doubted whether popular conceptions of the aims and methods of education and inquiry are a safe basis on which to establish the policy that shall dominate the work and influence of either the college or station.

The chief reason that will here be advanced for directing the means and energy of the land-grant colleges along the higher ranges of educational effort is that under the conditions now existing these institutions will most fully promote public welfare by devoting their resources mainly to preparing men and women for leadership. Our social and vocational future is largely a matter of leadership. He is wildly utopian who prophesies a day when all the people, or even a majority, will possess the knowledge and ability necessary to a wise discrimination in civic and economic affairs. It is equally fanciful to hope that any large proportion of actual farmers will ever be college-trained. Secondary education must serve the needs of the great majority of the occupants of the land. In the past the reaction of the agricultural college upon public welfare has been largely through men who have become investigators, teachers, publicists and managers of large agricul-

tural enterprises rather than through the distribution of practical farmers.

What has been true of the past seems likely to be increasingly the experience of the future, and this fact in no way minimizes the value of the college in agricultural affairs. We ignore the teachings of all human experience if we look for the time when the destinies of the nation and the interests of agriculture or of any vocation will not be safeguarded by a small minority of citizens whose training has placed them outside the domination of dangerous sentiment and ignorant prejudice and who possess that power of discrimination derived from a knowledge of fundamental principles, without which we may not expect an intelligent and judicial consideration of either vocational or public questions.

Not only are we greatly dependent upon wise leadership in both social and industrial affairs, but with the college lies the opportunity for its development. It is among the young men and women who seek the advantages of college instruction that we find those who, because of ambition and capacity, constitute material with the largest possibilities of future usefulness. If the college fails in wisely molding these plastic minds it fails to fully occupy its one great opportunity, and if, on the other hand, the training given is inadequate or unbalanced or in any way less effective than is reasonably possible, both the receptive student and the public are defrauded and suffer a loss that can scarcely be made good.

Not all college graduates will be leaders, and not all leaders will possess a college degree; but it is a fact worthy of emphasis that the opportunity of the college is with the few and not with the many. Only a very small proportion (perhaps one or two in a hundred) of any generation of men and women will come into extended contact with college life, and these few will be the medium through which the college will render its largest and most effective service. The college can never come into efficient touch with the many as it does with the

few. Whatever direct influence it secures over the general public lacks concentration and continuity; in fact, is diffuse and indefinite. Experience and observation show that a discouraging proportion of the minds reached by the attempts at popular instruction are either irresponsive or incapable, and the constructive value of these efforts is not to be compared with the life-long example and influence of those who are adequately trained for social and industrial leadership.

There are those, doubtless, who believe that these institutions, supported by public funds, should stand in especially close relation to the people and that in order to do the work for which they were organized they should establish a low grade of admission, occupy a secondary place in our educational scheme, adhere closely to instruction of an ultra-vocational character and engage extensively in agricultural propaganda, leaving to the older colleges and universities the severer training that is required in preparing men and women for the higher ranges of thought and activity. It is to be hoped that if we have in any measure adopted this policy we shall move away from it as rapidly as circumstances will permit. Such a policy is a practical assumption that there is no place in the agricultural field for the highest type of intellectual development and equipment, an assumption to which no well-informed student of social and economic conditions is likely to consent. If we also take into consideration the fact that the dignity and importance of agricultural opportunities receive little emphasis in those institutions where the main trend of thought and training is in other directions, we see sufficient reasons why the agricultural college should not relegate to other agencies its clearly indicated function — the production of the leadership that is needed for advancing the interests of the farm.

And so, because of the unsatisfied demand for adequately trained teachers and investigators, because of the complex and difficult problems related to farm life that insistently

face us, so many of which are unsolved, because the redirection and upbuilding of rural-life institutions need for their accomplishment the guidance of leaders of a high order of ability, and because of the greatly increasing demand for service in these several directions which is only partially met, should we not insist that the material resources and the human knowledge at the command of the agricultural college and the plans and purposes there nourished should be directed toward sound inquiry and the training of young men and women for such service as will only be rendered by the few. Until we have means beyond what can reasonably be expended in increasing the efficiency of the colleges and stations, is it a wise policy to assign to other purposes funds that should be applied to securing and holding teachers and investigators of large attainments and success, those who are masters in their special fields? Agriculture needs more of such men and should be able to create for them a favorable environment for their work.

And we now come to a question towards which this discussion has been aiming from the very first. What conditions should prevail in college instruction and what results should be kept in view in the training of young men and women for vocational and social leadership?

In considering this question we may well begin by asking what qualities should be possessed by those who are to enter effectively into the service of agriculture and country life. There can be but one answer. They are the same fundamentally that are essential to efficiency and well-rounded success in any calling or profession. If the teacher, the investigator, the statesman, the lawyer or the business man should possess integrity of thought and purpose, be able to reason keenly and base their reasoning on fundamental and well-grounded principles, so should those who are to assume responsibility and leadership in agricultural affairs. There is no place for loose thinking and the empiricisms of super-

ficial knowledge in the consideration of the economic and social problems pertaining to the open country. It is hardly conceivable, either, that the college will succeed in developing in its students these necessary qualities by any educational methods essentially different from those commended by long experience. The pedagogical tools may differ from the old ones, but the ultimate result, if it is worth while, will be those attributes of mind and character that have long been recognized as the distinctive marks of strong men and women.

As preliminary to a discussion of the conditions essential to the attainment of this result, we may safely establish certain premises on which to base any contentions that may follow. These premises, conceded on every hand, are the following: first, the subject-matter of the classroom should be concise and severely engage the student's mind; second, the instruction given, in whatever field, should represent the latest and best conclusions; third, this instruction, if it is to secure for the graduate an advantage over the merely practical man, must give a well-grounded acquaintance with fundamental facts and principles; fourth, the college should so react upon the young men and women that come within its influence as to develop in them high ideals of living.

There are three factors that are most intimately related to these fundamental conditions, the teacher, the curriculum, and as an outgrowth of these two that somewhat intangible influence we call college atmosphere.

What about the larger of these factors, the teacher? It should be required of him as one great essential that he be a man of scholarly spirit and attainments, and being such he should have opportunity for study and reflection. Is it not time to inquire whether we do not need a renaissance of the atmosphere of scholarship in our vocational colleges, an atmosphere that must first surround the teacher, there to be breathed in by the student? Because we have been exalting the man with a so-called practical touch, possessed of the

ability to edify the farming public, through a pleasing way of discussing practical subjects or who hustles about doing things, is not our vision of the scholar as an essential factor in agricultural education and inquiry somewhat obscured, and if scholarship is to be discounted in favor of qualities that make for popularity, we may well be solicitous concerning the standards and effectiveness of agricultural instruction, a statement that is equally applicable to experiment stations as instruments of research.

It is a gross error to permit a young man, or any man, to believe that success with the people in conducting agricultural propaganda, or the possession of superficially built and glibly expressed practical knowledge, unsupported by a sound scientific training, constitutes an adequate reason why he should be a member of a college faculty or a station staff. Success in the energy-consuming activities of the institute platform, the fair exhibit, the railroad train or the demonstration field is not an evidence of fitness for classroom or research work. We are guilty of a false estimate of values when we place a salary premium or any other premium on success in distributing diluted information, however valuable this effort may be, as against the function and influence of the quiet and patient scholar.

If the college is to nourish the moral character of a student, the teacher must be something more than a scholar. Character will not be much influenced by directly aiming at such a result through the teaching of ethics. Much more potent will be the general tone or atmosphere of college halls, an atmosphere that emanates from the teacher. In his hands, teaching the sciences should not only promote scientific accuracy, but should nourish integrity of thought and purpose. All the exercises of the classroom should be pervaded by the ethical spirit. For these reasons the standards by which a faculty is selected should include something more than the possession of good character, and the necessary professional

qualifications. The human attributes of the teacher are no less important.

We may consider certain dangers to college instruction arising from extension work. This work on the part of the college teacher is a menace to his efficiency, because such activities not only use the physical energy that should be reserved for the classroom, but sooner or later they minimize or destroy the habit of study and the spirit of scholarship. The man who serves for any considerable part of his time as a purveyor of popular information is almost certain not to present to his students the latest and best knowledge in the best way, or to add much to the stock of knowledge.

Another danger to the teacher from a diversion of his thought to extension work of the popular kind is that unless he possesses unusual self-discipline and control, he will carry to the classroom more or less of the loose and dilute phraseology of platform discussion and will to a greater or less extent depart from the concise and severe terminology so essential to the best training conditions.

These are most unfortunate results. We should carefully guard and cherish the intellectual impulses and equipment of the teacher and the investigator, because they are the instruments whose edge must be fine if we are to be successful in rightly fashioning the minds and hearts of young men and women and in laying open the hidden recesses of truth.

What has been said concerning the qualities of the teacher and the necessity for defending him against the invasion of outside duties applies with equal force to the investigator. The experiment stations here represented, founded as research agencies, have rendered splendid service to agriculture and are now firmly established in the confidence of the people. Nevertheless, we should not let the popularity of these institutions cloud our vision or confuse our estimate of the real character of their work. They have mightily stirred the mass of agricultural knowledge, have conducted an extensive

propaganda of existing information, have recast old facts and principles into new and profitable applications and have made some explorations of real value into the unknown, all of this to the great benefit of the farmer and his business. But the period through which we have been passing can justly be characterized as much more marked for its development of agencies and for its distribution of existing information than for its permanent additions to agricultural science.

Moreover, leaving out of account the extensive dispersion of the time and energy of experiment station workers into the highways and byways of agricultural extension and considering only our attempts at investigation, it may reasonably be doubted whether, broadly speaking, our efforts of inquiry have been conducted on a plane of spirit and method as high as that reached by the investigators of an earlier period. It may be that we have lived up to our present possibilities, doubtless we have, but whether we have or not, it is certain that unless the agencies constituted for research purposes can secure and maintain larger freedom in policy and more fully break loose from the restrictions of expediency imposed by semi-political relations and by misguided demands for popular efforts on the part of supposed investigators, we shall mostly continue to halt on the outskirts of great problems whose solution would render to agriculture the highest possible service. It is gratifying to be able to believe, however, that we are on the ascending plane in the stability and effectiveness of our research efforts.

These suggestions concerning the limitation of the activities of the teacher and investigator are not intended to be arguments against the eminently useful efforts directed toward enlightening and stimulating the public mind. These efforts should continue, but it is fair to inquire whether we have not reached a point in the development of agricultural education and the demands made upon it, where the widely distributed popular instruction and secondary education of all forms

should be maintained through agencies organized especially for these purposes, to which the college of agriculture should be coördinated in an advisory relation. Extension instruction and secondary education, if they are to work out the largest values, must be widely available and stimulate local initiative and activity. The college may well be a source of advice, and, when means are abundant through a corps of experts who shall be independent of other duties, it may aid in giving the needed accuracy and direction to the knowledge that it is sought to impart. But such aid should serve to stimulate and supplement the activities of other agencies and of the various communities that are to be benefited and should be so related to the colleges as in no way to hamper their academic work.

Has not the time come when extension work should be carried on through the coördinated effort of the state department of education, the department or board of agriculture, the colleges, the normal and secondary schools, the churches, the grange, the railroads, the chambers of commerce and other business and commercial bodies, all of which should be associated in a board of direction and should contribute to a permanent and salaried faculty of instruction? There is every reason why the agricultural college should have an important place in the education of the public, but is there now any reason why it should attempt to compass the whole field or burden itself with the entire responsibility, financial or otherwise, for such efforts?

There are those who will argue, I suspect, that the closer limitation of the work of the college faculty to the higher ranges of academic training would cause these institutions to lose their vital connection with public thought and needs. We certainly have no use for a fossilized center of learning in these days when the college must be regarded as a public servant, but to prevent its petrification it is not necessary that the farmers' picnic, the grange hall, the institute plat-

form or the railroad train shall be frequented by the teacher and investigator. These excursions from college halls may be replaced by expeditions for the careful study of social and economic conditions as they are seen on the farm and in the various business operations that are related to agriculture, with no loss, but rather a gain in the value of the service rendered.

When an issue is raised concerning vocational curriculums we enter upon debatable ground. This audience needs not to be told that many a faculty session has been devoted to a vigorous, even heated, discussion over the relative proportions and distribution of studies in agricultural and engineering courses, for there are present many who are in the midst of a contest that is still being waged. Only general considerations concerning this much-debated matter are in order at this time.

A proper regard for a student's success in after life requires that at least three considerations shall enter into the use of his time and into the arrangement and subject-matter of the course of study he is expected to pursue. These are the development of personal power, the cultivation of both the sense and understanding of social and moral obligations, and preparation for vocational activity.

The development of personal power is placed first because it is the all-comprehensive factor in determining individual efficiency. It is not attained through the mere sorting of information or through familiarity with technical details, for knowledge and skill are but instruments for use. It consists essentially of the power of initiative, the ability to think clearly and to reason sanely and fundamentally, and, above all, it involves that mastery of self and of the raw materials of life that lies at the foundation of all individual success.

Personal power is acquired through discipline, and so the disciplinary value of a course of study is a prime consideration. Have we not to some extent lost sight of the great and

abiding truth that the intellectual and moral culture of man as a man is the only road to either a social or a vocational uplift? In our anxiety to demonstrate the value of these institutions to the material interests of the nation, have we not over-commercialized the instruction, even the atmosphere, of our vocational schools and colleges? The leaders in engineering education are beginning to say so, and is it not true of agriculture? We may well give heed to the words of a recent writer who thus comments on the educational influence of the ancient guilds:

The soul of this ideal education of the masses was the training of character. They had no illusions that the mere imparting of information would make people better, nor that the knowing of many things would make them more desirable citizens. In none of the higher walks of life does it ever cease to be more the question how much of a man one is, than how much he knows of his special business.

The cultivation of the sense and understanding of social and moral obligations is placed second because human relations and the quality of human effort are determinative factors in the larger successes and satisfactions of life, whether we consider the individual or the social body. It is sound doctrine to declare that, in the last analysis, the defeats of individuals and of nations are moral defeats. Moreover, we now see very clearly that the critical problems which face agriculture are no less social than vocational. Our greater weakness is not in our bread-winning capacity, but in unsound business ethics and in bad social adjustments.

And then, there is the larger relation of the educated man to national welfare. It has been said that the cure for the ills of democracy is more democracy. If more democracy is coming, and it seems to be, we shall sorely need the steadying influence of wise social leadership. The education of the masses is superficial. That keen observer, Mr. Bryce, has said that "it is sufficient to enable them to think they know something about the great problems of politics and insufficient

to show them how little they know." Bishop Newman declares that "if a practical end must be assigned to a university course I say it is that of training good members of society. It is the art of social life and its end is fitness for the world." Another writer has observed that the land-grant colleges are ranked as an economic rather than a social force. If this accusation is just, these institutions should purge themselves of an unsound policy. We do violence to the highest interests of the individual and of society if we fail to cultivate in those over whom the mantle of a baccalaureate degree is thrown a sense and comprehension of their obligations to society.

It is a distorted training that emphasizes bread-winning capacity at the expense of fitness for social service. Our national welfare is already threatened by the divorcement of patriotic citizenship from industrial activity.

Preparation for vocational activity is placed last, but not because the equipment of the mind with the facts of science and their applications to the art of agriculture is in any sense unimportant. The colleges of agriculture are dealing directly with the subject-matter that is related to the farmer's vocation, and they will violate their obligations and limit their usefulness if they do not continue to do so.

In discussing the vocational and training value of courses of study in agriculture I shall simply be ranging myself on one side of this much debated question when I insist that these courses should present good pedagogical form and should lend themselves largely to training in the fundamental sciences and present the lowest feasible minimum of ultra-practical subjects.

Remarks concerning pedagogical form may not now be pertinent to any existing situation. It has been said, however, that, in the past, agricultural subjects have been taken out of the normal pedagogical order and placed among the studies of the freshman year, or otherwise distributed illogically in

the curriculum, simply that a student's attention shall be held to agriculture and more graduates in agriculture thereby secured. Doubtless such transgressions are not committed now, but if they are they look very much like an attempt to lasso young men and drag them at the heels of expediency. What justification is there for invading the intellectual rights of a student or imperiling his future success by giving him less than the best possible training; and how useless such an expedient! We shall not coerce a man's choice of a life work, however hard we may try to do so. Young men will continue to enter the door that they believe opens to them the largest opportunity, as they always have done and as they ought to do.

It is the subject-matter that should engage the attention of the agricultural student concerning which we are likely to differ most widely in opinion. Those who are seeking for members of a faculty or station staff are bound to concede that, as a rule, altogether too many graduates are poorly trained for these positions, largely because they are poorly fitted in the sciences fundamental to the line of work in which they offer themselves.

For instance, candidates for positions in horticulture are generally obliged to confess a woeful lack of acquaintance with physiological botany. Those supposed to be specially trained in animal nutrition rarely have the necessary knowledge of organic and biological chemistry, and graduates in agronomy are likely to be more familiar with superficial facts than with soil chemistry and the science of plant nutrition. Judging cattle, corn and fruit; grafting trees, visiting orchards, calculating rations are exercises of small training value, even small vocational value, compared with severe attention to the processes of nature that underlie agricultural practice of all kinds. If many of the colleges expect to give their graduates a good start on the road to success as teachers and station workers, they should seriously consider a curriculum that

deals more largely with the fundamental sciences and less with agricultural technics as a superstructure.

And should not the same policy be followed with those who are to enter practical agriculture? A fact of fundamental importance in this connection is that the farmer is equipped for success in farm practice not so much through expert handicraft as through a knowledge of conditions that determine the successful growth of plants and animals; in other words, an acquaintance with nature's processes. The mechanical details of agriculture are comparatively simple, but the control of nature's resources is complex and difficult. With great respect for the opinions of those who hold opposite views, I am constrained to express the conviction that the man is best prepared for the life of a farmer who knows the most about the fundamental sciences and their relation to his vocation, and for this reason I can but regard the time as comparatively inefficiently spent that is devoted in college to observations and exercises of an ultra practical character, or to gaining information that is easily acquired from the ordinary experiences of practical life. This doctrine may be reactionary but it is in accordance with movements now in progress in other vocational schools. We have fallen into the error, it is to be feared, of regarding the student mind as a storage tank for useful facts rather than as an instrument to be fashioned into soundness and efficiency. We must never forget that the farmer is comprehended in the man. And when we realize that many of the graduates of these institutions will exert a dominating influence upon the mental and moral development of young men and women, we see a most important reason why their education should not be confined to the narrow line of technical training. And above all, as has been urged, these graduates are to be members of society.

After all, what are the supreme objects of education? It has been reported, though I do not credit the statement, that a member of an agricultural college faculty once declared that

the business of his institution was to bring about the production of more hogs at greater profit. If this remark was made, what a spectacle it pictures! It places the hog at the pinnacle of educational aspiration with man as a lesser figure. In sharp contrast to this gross conception of educational ideals stand the sentiments of great minds who have seen broadly and clearly the larger issues of life.

Hill says of education that it should "quicken a man's mental perceptions, form in him the habit of prompt and accurate judgment; lead to delicacy and depth in every right feeling and make him inflexible in his conscientious and steadfast devotion to all his duties." Milton wrote that "the main skill and groundwork of education will be to temper the pupils with such lectures and explanations as will draw them into willing obedience, influenced with the study of learning and the admiration of virtue, stirred up with high hopes of living to be brave men and worthy patriots."

Listen to Mill:

The moral or religious influence which a university can exercise consists less in any express teaching than in the pervading tone of the place. Whatever it teaches it should teach as penetrated by a sense of duty; it should present all knowledge as chiefly a means of worthiness in life, given for the double purpose of making each of us practically useful to our fellow creatures and of elevating the character of the species itself.

A LIBERAL EDUCATION; AND WHERE TO FIND IT¹

THOMAS HENRY HUXLEY

THE business which the South London Working Men's College has undertaken is a great work; indeed, I might say, that Education, with which that college proposes to grapple, is the greatest work of all those which lie ready to a man's hand just at present.

And, at length, this fact is becoming generally recognized. You cannot go anywhere without hearing a buzz of more or less confused and contradictory talk on this subject — nor can you fail to notice that, in one point at any rate, there is a very decided advance upon like discussions in former days. Nobody outside the agricultural interest now dares to say that education is a bad thing. If any representative of the once large and powerful party, which, in former days, proclaimed this opinion, still exists in a semi-fossil state, he keeps his thoughts to himself. In fact, there is a chorus of voices, almost distressing in their harmony, raised in favour of the doctrine that education is the great panacea for human troubles, and that, if the country is not shortly to go to the dogs, everybody must be educated.

The politicians tell us, "you must educate the masses because they are going to be masters." The clergy join in the cry for education, for they affirm that the people are drifting away from church and chapel into the broadest infidelity. The manufacturers and the capitalists swell the chorus lustily.

¹ This essay, which was written in 1868, was influential in stimulating the movement which resulted in shifting the emphasis from classical to scientific studies.

They declare that ignorance makes bad workmen; that England will soon be unable to turn out cotton goods, or steam engines, cheaper than other people; and then, Ichabod! Ichabod! the glory will be departed from us. And a few voices are lifted up in favour of the doctrine that the masses should be educated because they are men and women with unlimited capacities of being, doing, and suffering, and that it is as true now, as ever it was, that the people perish for lack of knowledge.

These members of the minority, with whom I confess I have a good deal of sympathy, are doubtful whether any of the other reasons urged in favour of the education of the people are of much value — whether, indeed, some of them are based upon either wise or noble grounds of action. They question if it be wise to tell people that you will do for them, out of fear of their power, what you have left undone, so long as your only motive was compassion for their weakness and their sorrows. And if ignorance of everything which it is needful a ruler should know is likely to do so much harm in the governing classes of the future, why is it, they ask reasonably enough, that such ignorance in the governing classes of the past has not been viewed with equal horror?

Compare the average artisan and the average country squire, and it may be doubted if you will find a pin to choose between the two in point of ignorance, class feeling, or prejudice. It is true that the ignorance is of a different sort — that the class feeling is in favour of a different class — and that the prejudice has a distinct savour of wrong-headedness in each case — but it is questionable if the one is either a bit better, or a bit worse, than the other. The old protectionist theory is the doctrine of trades unions as applied by the squires, and the modern trades unionism is the doctrine of the squires applied by the artisans. Why should we be worse off under one *régime* than under the other?

Again, this sceptical minority asks the clergy to think

whether it is really want of education which keeps the masses away from their ministrations — whether the most completely educated men are not as open to reproach on this score as the workmen; and whether, perchance, this may not indicate that it is not education which lies at the bottom of the matter?

Once more, these people, whom there is no pleasing, venture to doubt whether the glory, which rests upon being able to undersell all the rest of the world, is a very safe kind of glory — whether we may not purchase it too dear; especially if we allow education which ought to be directed to the making of men, to be diverted into a process of manufacturing human tools, wonderfully adroit in the exercise of some technical industry, but good for nothing else.

And, finally, these people inquire whether it is the masses alone who need a reformed and improved education. They ask whether the richest of our public schools might not well be made to supply knowledge, as well as gentlemanly habits, a strong class feeling, and eminent proficiency in cricket. They seem to think that the noble foundations of our old universities are hardly fulfilling their functions in their present posture of half-clerical seminaries, half racecourses, where men are trained to win a senior wranglership, or a double first, as horses are trained to win a cup, with as little reference to the needs of after-life in the case of the man as in that of the racer. And while as zealous for education as the rest, they affirm that if the education of the richer classes were such as to fit them to be the leaders and the governors of the poorer; and if the education of the poorer classes were such as to enable them to appreciate really wise guidance and good governance, the politicians need not fear mob-law, nor the clergy lament their want of flocks, nor the capitalist prognosticate the annihilation of the prosperity of the country.

Such is the diversity of opinion upon the why and the wherefore of education. And my hearers will be prepared to

expect that the practical recommendations which are put forward are not less discordant. There is a loud cry for compulsory education. We English, in spite of constant experience to the contrary, preserve a touching faith in the efficacy of acts of parliament; and I believe we should have compulsory education in the course of next session if there were the least probability that half a dozen leading statesmen of different parties would agree what that education should be.

Some hold that education without theology is worse than none. Others maintain, quite as strongly, that education with theology is in the same predicament. But this is certain, that those who hold the first opinion can by no means agree what theology should be taught; and that those who maintain the second are in a small minority.

At any rate "make people learn to read, write, and cipher," say a great many; and the advice is undoubtedly sensible as far as it goes. But, as has happened to me in former days, those who, in despair of getting anything better, advocate this measure, are met with the objection that it is very like making a child practise the use of a knife, fork, and spoon, without giving it a particle of meat. I really don't know what reply is to be made to such an objection.

But it would be unprofitable to spend more time in disentangling, or rather in showing up the knots in, the ravelled skeins of our neighbours. Much more to the purpose is it to ask if we possess any clue of our own which may guide us among these entanglements. And by way of a beginning, let us ask ourselves — What is education? Above all things, what is our ideal of a thoroughly liberal education? — of that education which, if we could begin life again, we would give ourselves — of that education which, if we could mould the fates to our own will, we would give our children? Well, I know not what may be your conceptions upon this matter, but I will tell you mine, and I hope I shall find that our views are not very discrepant.

Suppose it were perfectly certain that the life and fortune of every one of us would, one day or other, depend upon his winning or losing a game at chess. Don't you think that we should all consider it to be a primary duty to learn at least the names and the moves of the pieces; to have a notion of a gambit, and a keen eye for all the means of giving and getting out of check? Do you not think that we should look with a disapprobation amounting to scorn, upon the father who allowed his son, or the state which allowed its members, to grow up without knowing a pawn from a knight?

Yet, it is a very plain and elementary truth that the life, the fortune, and the happiness of every one of us, and, more or less, of those who are connected with us, do depend upon our knowing something of the rules of a game infinitely more difficult and complicated than chess. It is a game which has been played for untold ages, every man and woman of us being one of the two players in a game of his or her own. The chess-board is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of nature. The player on the other side is hidden from us. We know that his play is always fair, just, and patient. But also we know, to our cost, that he never overlooks a mistake, or makes the smallest allowance for ignorance. To the man who plays well, the highest stakes are paid, with that sort of overflowing generosity with which the strong shows delight in strength. And one who plays ill is checkmated — without haste, but without remorse.

My metaphor will remind some of you of the famous picture in which Retzsch has depicted Satan playing at chess with man for his soul. Substitute for the mocking fiend in that picture a calm, strong angel who is playing for love, as we say, and would rather lose than win — and I should accept it as an image of human life.

Well, what I mean by Education is learning the rules of this mighty game. In other words, education is the instruc-

tion of the intellect in the laws of nature, under which name I include not merely things and their forces, but men and their ways; and the fashioning of the affections and of the will into an earnest and loving desire to move in harmony with those laws. For me, education means neither more nor less than this. Anything which professes to call itself education must be tried by this standard, and if it fails to stand the test, I will not call it education, whatever may be the force of authority or of numbers upon the other side.

It is important to remember that, in strictness, there is no such thing as an uneducated man. Take an extreme case. Suppose that an adult man, in the full vigour of his faculties, could be suddenly placed in the world, as Adam is said to have been, and then left to do as he best might. How long would he be left uneducated? Not five minutes. Nature would begin to teach him, through the eye, the ear, the touch, the properties of objects. Pain and pleasure would be at his elbow telling him to do this and avoid that; and by slow degrees the man would receive an education which, if narrow, would be thorough, real, and adequate to his circumstances, though there would be no extras and very few accomplishments.

And if to this solitary man entered a second Adam, or, better still, an Eve, a new and greater world, that of social and moral phenomena, would be revealed. Joys and woes, compared with which all others might seem but faint shadows, would spring from the new relations. Happiness and sorrow would take the place of the coarser monitors, pleasure and pain; but conduct would still be shaped by the observation of the natural consequences of actions; or, in other words, by the laws of the nature of man.

To every one of us the world was once as fresh and new as to Adam. And then, long before we were susceptible of any other mode of instruction, nature took us in hand, and every minute of waking life brought its educational influence, shaping our actions into rough accordance with nature's

laws, so that we might not be ended untimely by too gross disobedience. Nor should I speak of this process of education as past, for any one, be he as old as he may. For every man the world is as fresh as it was at the first day, and as full of untold novelties for him who has the eyes to see them. And nature is still continuing her patient education of us in that great university, the universe, of which we are all members — nature having no Test-Acts.

Those who take honours in nature's university, who learn the laws which govern men and things and obey them, are the really great and successful men in this world. The great mass of mankind are the "Poll," who pick up just enough to get through without much discredit. Those who won't learn at all are plucked; and then you can't come up again. Nature's pluck means extermination.

Thus the question of compulsory education is settled so far as nature is concerned. Her bill on that question was framed and passed long ago. But, like all compulsory legislation, that of nature is harsh and wasteful in its operation. Ignorance is visited as sharply as wilful disobedience — incapacity meets with the same punishment as crime. Nature's discipline is not even a word and a blow, and the blow first; but the blow without the word. It is left to you to find out why your ears are boxed.

The object of what we commonly call education — that education in which man intervenes and which I shall distinguish as artificial education — is to make good these defects in nature's methods; to prepare the child to receive nature's education, neither incapably nor ignorantly, nor with wilful disobedience; and to understand the preliminary symptoms of her pleasure, without waiting for the box on the ear. In short, all artificial education ought to be an anticipation of natural education. And a liberal education is an artificial education — which has not only prepared a man to escape the great evils of disobedience to natural laws, but has trained

him to appreciate and to seize upon the rewards which nature scatters with as free a hand as her penalties.

That man, I think, has had a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold, logic engine, with all its parts of equal strength, and in smooth working order; ready, like a steam engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of nature or of art, to hate all vileness, and to respect others as himself.

Such an one and no other, I conceive, has had a liberal education; for he is, as completely as a man can be, in harmony with nature. He will make the best of her, and she of him. They will get on together rarely; she as his ever-beneficent mother; he as her mouthpiece, her conscious self, her minister and interpreter.

Where is such an education as this to be had? Where is there any approximation to it? Has any one tried to found such an education? Looking over the length and breadth of these islands, I am afraid that all these questions must receive a negative answer. Consider our primary schools and what is taught in them. A child learns: —

1. To read, write, and cipher, more or less well; but in a very large proportion of cases not so well as to take pleasure in reading, or to be able to write the commonest letter properly.
2. A quantity of dogmatic theology, of which the child, nine times out of ten, understands next to nothing.
3. Mixed up with this, so as to seem to stand or fall with it, a few of the broadest and simplest principles of morality.

This is, to my mind, much as if a man of science should make the story of the fall of the apple in Newton's garden an integral part of the doctrine of gravitation, and teach it as of equal authority with the law of the inverse squares.

4. A good deal of Jewish history and Syrian geography, and perhaps a little something about English history and the geography of the child's own country. But I doubt if there is a primary school in England in which hangs a map of the hundred in which the village lies, so that the children may be practically taught by it what a map means.

5. A certain amount of regularity, attentive obedience, respect for others: obtained by fear, if the master be incompetent or foolish; by love and reverence, if he be wise.

So far as this school course embraces a training in the theory and practice of obedience to the moral laws of nature, I gladly admit, not only that it contains a valuable educational element, but that, so far, it deals with the most valuable and important part of all education. Yet, contrast what is done in this direction with what might be done; with the time given to matters of comparatively no importance; with the absence of any attention to things of the highest moment; and one is tempted to think of Falstaff's bill and "the halfpenny worth of bread to all that quantity of sack."

Let us consider what a child thus "educated" knows, and what it does not know. Begin with the most important topic of all — morality, as the guide of conduct. The child knows well enough that some acts meet with approbation and some with disapprobation. But it has never heard that there lies in the nature of things a reason for every moral law, as cogent and as well defined as that which underlies every physical law; that stealing and lying are just as certain to be followed by evil consequences as putting your hand in the fire, or jumping out of a garret window. Again, though the scholar may have been made acquainted, in dogmatic fashion, with the broad laws of morality, he has had no training in the applica-

tion of those laws to the difficult problems which result from the complex conditions of modern civilization. Would it not be very hard to expect any one to solve a problem in conic sections who had merely been taught the axioms and definitions of mathematical science?

A workman has to bear hard labour, and perhaps privation, while he sees others rolling in wealth, and feeding their dogs with what would keep his children from starvation. Would it not be well to have helped that man to calm the natural promptings of discontent by showing him, in his youth, the necessary connection of the moral law which prohibits stealing with the stability of society — by proving to him, once for all, that it is better for his own people, better for himself, better for future generations, that he should starve than steal? If you have no foundation of knowledge or habit of thought to work upon, what chance have you of persuading a hungry man that a capitalist is not a thief “with a *circumbendibus*?” And if he honestly believes that, of what avail is it to quote the commandment against stealing when he proposes to make the capitalist disgorge?

Again, the child learns absolutely nothing of the history or the political organization of his own country. His general impression is, that everything of much importance happened a very long while ago; and that the Queen and the gentlefolks govern the country much after the fashion of King David and the elders and nobles of Israel — his sole models. Will you give a man with this much information a vote? In easy times he sells it for a pot of beer. Why should he not? It is of about as much use to him as a chignon, and he knows as much what to do with it, for any other purpose. In bad times, on the contrary, he applies his simple theory of government, and believes that his rulers are the cause of his sufferings — a belief which sometimes bears remarkable practical fruits.

Least of all, does the child gather from this primary “education” of ours a conception of the laws of the physical world,

or of the relations of cause and effect therein. And this is the more to be lamented, as the poor are especially exposed to physical evils, and are more interested in removing them than any other class of the community. If any one is concerned in knowing the ordinary laws of mechanics one would think it is the hand-labourer, whose daily toil lies among levers and pulleys; or among the other implements of artisan work. And if any one is interested in the laws of health, it is the poor man, whose strength is wasted by ill-prepared food, whose health is sapped by bad ventilation and bad drainage, and half of whose children are massacred by disorders which might be prevented. Not only does our present primary education carefully abstain from hinting to the poor man that some of his greatest evils are traceable to mere physical agencies, which could be removed by energy, patience, and frugality; but it does worse — it renders him, so far as it can, deaf to those who could help him, and tries to substitute an Oriental submission to what is falsely declared to be the will of God, for his natural tendency to strive after a better condition.

What wonder then if very recently an appeal has been made to statistics for the profoundly foolish purpose of showing that education is of no good — that it diminishes neither misery nor crime among the masses of mankind? I reply, why should the thing which has been called education do either the one or the other? If I am a knave or a fool, teaching me to read and write won't make me less of either one or the other — unless somebody shows me how to put my reading and writing to wise and good purposes.

Suppose any one were to argue that medicine is of no use, because it could be proved statistically that the percentage of deaths was just the same among people who have been taught how to open a medicine chest and among those who did not so much as know the key by sight. The argument is absurd; but it is not more preposterous than that against

which I am contending. The only medicine for suffering, crime, and all the other woes of mankind, is wisdom. Teach a man to read and write, and you have put into his hands the great keys of the wisdom box. But it is quite another matter whether he ever opens the box or not. And he is as likely to poison as to cure himself, if, without guidance, he swallows the first drug that comes to hand. In these times a man may as well be purblind, as unable to read — lame, as unable to write. But I protest that if I thought the alternative were a necessary one, I would rather that the children of the poor should grow up ignorant of both these mighty arts, than that they should remain ignorant of that knowledge to which these arts are means.

It may be said that all these animadversions may apply to primary schools, but that the higher schools, at any rate, must be allowed to give a liberal education. In fact, they professedly sacrifice everything else to this object.

Let us inquire into this matter. What do the higher schools, those to which the great middle class of the country sends its children, teach, over and above the instruction given in the primary schools? There is a little more reading and writing of English. But, for all that, every one knows that it is a rare thing to find a boy of the middle or upper classes who can read aloud decently, or who can put his thoughts on paper in clear and grammatical (to say nothing of good or elegant) language. The “ciphering” of the lower schools expands into elementary mathematics in the higher; into arithmetic, with a little algebra, a little Euclid. But I doubt if one boy in five hundred has ever heard the explanation of a rule of arithmetic, or knows his Euclid otherwise than by rote.

Of theology, the middle-class schoolboy gets rather less than poorer children, less absolutely and less relatively, because there are so many other claims upon his attention. I venture to say that, in the great majority of cases, his ideas

on this subject when he leaves school are of the most shadowy and vague description, and associated with painful impressions of the weary hours spent in learning collects and catechism by heart.

Modern geography, modern history, modern literature; the English language as a language; the whole circle of the sciences, physical, moral, and social, are even more completely ignored in the higher than in the lower schools. Up till within a few years back, a boy might have passed through any one of the great public schools with the greatest distinction and credit, and might never so much as have heard of one of the subjects I have just mentioned. He might never have heard that the earth goes round the sun; that England underwent a great revolution in 1688, and France another in 1789; that there once lived certain notable men called Chaucer, Shakespeare, Milton, Voltaire, Goethe, Schiller. The first might be a German and the last an Englishman for anything he could tell you to the contrary. And as for Science, the only idea the word would suggest to his mind would be dexterity in boxing.

I have said that this was the state of things a few years back, for the sake of the few righteous who are to be found among the educational cities of the plain. But I would not have you too sanguine about the result, if you sound the minds of the existing generation of public school-boys on such topics as those I have mentioned.

Now let us pause to consider this wonderful state of affairs; for the time will come when Englishmen will quote it as the stock example of the stolid stupidity of their ancestors in the nineteenth century. The most thoroughly commercial people, the greatest voluntary wanderers and colonists the world has ever seen, are precisely the middle classes of this country. If there be a people which has been busy making history on the great scale for the last three hundred years — and the most profoundly interesting history — history which, if it happened

to be that of Greece or Rome, we should study with avidity — it is the English. If there be a people which, during the same period, has developed a remarkable literature, it is our own. If there be a nation whose prosperity depends absolutely and wholly upon their mastery over the forces of nature, upon their intelligent apprehension of, and obedience to the laws of the creation and distribution of wealth, and of the stable equilibrium of the forces of society, it is precisely this nation. And yet this is what these wonderful people tell their sons: — “At the cost of from one to two thousand pounds of our hard-earned money we devote twelve of the most precious years of your lives to school. There you shall toil, or be supposed to toil; but there you shall not learn one single thing of all those you will most want to know directly you leave school and enter upon the practical business of life. You will in all probability go into business, but you shall not know where or how any article of commerce is produced, or the difference between an export or an import, or the meaning of the word ‘capital.’ You will very likely settle in a colony, but you shall not know whether Tasmania is part of New South Wales, or *vice versâ*.

“Very probably you may become a manufacturer, but you shall not be provided with the means of understanding the working of one of your own steam-engines, or the nature of the raw products you employ; and when you are asked to buy a patent you shall not have the slightest means of judging whether the inventor is an impostor who is contravening the elementary principles of science, or a man who will make you as rich as Cræsus.

“You will very likely get into the House of Commons. You will have to take your share in making laws which may prove a blessing or a curse to millions of men. But you shall not hear one word respecting the political organization of your country; the meaning of the controversy between freetraders and protectionists shall never have been mentioned to you;

you shall not so much as know that there are such things as economical laws.

“The mental power which will be of most importance in your daily life will be the power of seeing things as they are without regard to authority; and of drawing accurate general conclusions from particular facts. But at school and at college you shall know of no source of truth but authority; nor exercise your reasoning faculty upon anything but deduction from that which is laid down by authority.

“You will have to weary your soul with work, and many a time eat your bread in sorrow and in bitterness, and you shall not have learned to take refuge in the great source of pleasure without alloy, the serene resting-place for worn human nature — the world of art.”

Said I not rightly that we are a wonderful people? I am quite prepared to allow, that education entirely devoted to these omitted subjects might not be a completely liberal education. But is an education which ignores them all a liberal education? Nay, is it too much to say that the education which should embrace these subjects and no others would be a real education, though an incomplete one; while an education which omits them is really not an education at all, but a more or less useful course of intellectual gymnastics?

For what does the middle-class school put in the place of all these things which are left out? It substitutes what is usually comprised under the compendious title of the “classics” — that is to say, the languages, the literature, and the history of the ancient Greeks and Romans, and the geography of so much of the world as was known to these two great nations of antiquity. Now, do not expect me to depreciate the earnest and enlightened pursuit of classical learning. I have not the least desire to speak ill of such occupations, nor any sympathy with those who run them down. On the contrary, if my opportunities had lain in that direction, there is no investigation

into which I could have thrown myself with greater delight than that of antiquity.

What science can present greater attractions than philology? How can a lover of literary excellence fail to rejoice in the ancient masterpieces? And with what consistency could I, whose business lies so much in the attempt to decipher the past, and to build up intelligible forms out of the scattered fragments of long-extinct beings, fail to take a sympathetic, though an unlearned, interest in the labours of a Niebuhr, a Gibbon, or a Grote? Classical history is a great section of the palæontology of man; and I have the same double respect for it as for other kinds of palæontology — that is to say, a respect for the facts which it establishes as for all facts, and a still greater respect for it as a preparation for the discovery of a law of progress.

But if the classics were taught as they might be taught — if boys and girls were instructed in Greek and Latin, not merely as languages, but as illustrations of philological science; if a vivid picture of life on the shores of the Mediterranean two thousand years ago were imprinted on the minds of scholars; if ancient history were taught, not as a weary series of feuds and fights, but traced to its causes in such men placed under such conditions; if, lastly, the study of the classical books were followed in such a manner as to impress boys with their beauties, and with the grand simplicity of their statement of the everlasting problems of human life, instead of with their verbal and grammatical peculiarities; I still think it as little proper that they should form the basis of a liberal education for our contemporaries, as I should think it fitting to make that sort of palæontology with which I am familiar the back-bone of modern education.

It is wonderful how close a parallel to classical training could be made out of that palæontology to which I refer. In the first place I could get up an osteological primer so arid, so pedantic in its terminology, so altogether distasteful to the

youthful mind, as to beat the recent famous production of the head-masters out of the field in all these excellences. Next, I could exercise my boys upon easy fossils, and bring out all their powers of memory and all their ingenuity in the application of my osteogrammatical rules to the interpretation, or construing, of those fragments. To those who had reached the higher classes, I might supply odd bones to be built up into animals, giving great honour and reward to him who succeeded in fabricating monsters most entirely in accordance with the rules. That would answer to verse-making and essay-writing in the dead languages.

To be sure, if a great comparative anatomist were to look at these fabrications he might shake his head, or laugh. But what then? Would such a catastrophe destroy the parallel? What, think you, would Cicero, or Horace, say to the production of the best sixth form going? And would not Terence stop his ears and run out if he could be present at an English performance of his own plays? Would Hamlet, in the mouths of a set of French actors, who should insist on pronouncing English after the fashion of their own tongue, be more hideously ridiculous?

But it will be said that I am forgetting the beauty, and the human interest, which appertain to classical studies. To this I reply that it is only a very strong man who can appreciate the charms of a landscape as he is toiling up a steep hill, along a bad road. What with short-windedness, stones, ruts, and a pervading sense of the wisdom of rest and be thankful, most of us have little enough sense of the beautiful under these circumstances. The ordinary school-boy is precisely in this case. He finds Parnassus uncommonly steep, and there is no chance of his having much time or inclination to look about him till he gets to the top. And nine times out of ten he does not get to the top.

But if this be a fair picture of the results of classical teaching at its best — and I gather from those who have authority

to speak on such matters that it is so — what is to be said of classical teaching at its worst, or in other words, of the classics of our ordinary middle-class schools?¹ I will tell you. It means getting up endless forms and rules by heart. It means turning Latin and Greek into English, for the mere sake of being able to do it, and without the smallest regard to the worth, or worthlessness, of the author read. It means the learning of innumerable, not always decent, fables in such a shape that the meaning they once had is dried up into utter trash; and the only impression left upon a boy's mind is, that the people who believed such things must have been the greatest idiots the world ever saw. And it means, finally, that after a dozen years spent at this kind of work, the sufferer shall be incompetent to interpret a passage in an author he has not already got up; that he shall loathe the sight of a Greek or Latin book; and that he shall never open, or think of, a classical writer again, until, wonderful to relate, he insists upon submitting his sons to the same process.

These be your gods, O Israel! For the sake of this net result (and respectability) the British father denies his children all the knowledge they might turn to account in life, not merely for the achievement of vulgar success, but for guidance in the great crises of human existence. This is the stone he offers to those whom he is bound by the strongest and tenderest ties to feed with bread.

If primary and secondary education are in this unsatisfactory state, what is to be said to the universities? This is an awful subject, and one I almost fear to touch with my unhallowed hands; but I can tell you what those say who have authority to speak.

The Rector of Lincoln College, in his lately published

¹ For a justification of what is here said about these schools, see that valuable book, *Essays on a Liberal Education*, *passim*.

valuable *Suggestions for Academical Organization with special reference to Oxford*, tells us: —

The colleges were, in their origin, endowments, not for the elements of a general liberal education, but for the prolonged study of special and professional faculties by men of riper age. The universities embraced both these objects. The colleges, while they incidentally aided in elementary education, were specially devoted to the highest learning. . . .

This was the theory of the middle-age university and the design of collegiate foundations in their origin. Time and circumstances have brought about a total change. The colleges no longer promote the researches of science, or direct professional study. Here and there college walls may shelter an occasional student, but not in larger proportions than may be found in private life. Elementary teaching of youths under twenty is now the only function performed by the university, and almost the only object of college endowments. Colleges were homes for the life-study of the highest and most abstruse parts of knowledge. They have become boarding schools in which the elements of the learned languages are taught to youths. (P. 127.)

If Mr. Pattison's high position, and his obvious love and respect for his university be insufficient to convince the outside world that language so severe is yet no more than just, the authority of the Commissioners who reported on the University of Oxford in 1850 is open to no challenge. Yet they write: —

It is generally acknowledged that both Oxford and the country at large suffer greatly from the absence of a body of learned men devoting their lives to the cultivation of science, and to the direction of academical education.

The fact that so few books of profound research emanate from the University of Oxford, materially impairs its character as a seat of learning, and consequently its hold on the respect of the nation.

Cambridge can claim no exemption from the reproaches addressed to Oxford. And thus there seems no escape from the admission that what we fondly call our great seats of learning are simply "boarding schools" for bigger boys;

that learned men are not more numerous in them than out of them; that the advancement of knowledge is not the object of fellows of colleges; that, in the philosophic calm and meditative stillness of their greenswarded courts philosophy does not thrive, and meditation bears few fruits.

It is my good fortune to reckon amongst my friends resident members of both universities, who are men of learning and research, zealous cultivators of science, keeping before their minds a noble ideal of a university, and doing their best to make that ideal a reality; and, to me, they would necessarily typify the universities, did not the authoritative statements I have quoted compel me to believe that they are exceptional, and not representative men. Indeed, upon calm consideration, several circumstances lead me to think that the Rector of Lincoln College and the Commissioners cannot be far wrong.

I believe there can be no doubt that the foreigner who should wish to become acquainted with the scientific, or the literary, activity of modern England, would simply lose his time and his pains if he visited our universities with that object.

And, as for works of profound research on any subject, and, above all, in that classical lore for which the universities profess to sacrifice almost everything else, why, a third-rate, poverty-stricken German university turns out more produce of that kind in one year than our vast and wealthy foundations elaborate in ten.

Ask any man who is investigating any question, profoundly and thoroughly — be it historical, philosophical, philological, physical, literary, or theological; who is trying to make himself master of any abstract subject (except, perhaps, political economy and geology, both of which are intensely Anglican sciences), whether he is not compelled to read half a dozen times as many German as English books? And whether, of these English books, more than one in ten is the

work of a fellow of a college, or a professor of an English university?

Is this from any lack of power in the English as compared with the German mind? The countrymen of Grote and of Mill, of Faraday, of Robert Brown, of Lyell, and of Darwin, to go no further back than the contemporaries of men of middle age, can afford to smile at such a suggestion. England can show now, as she has been able to show in every generation since civilization spread over the West, individual men who hold their own against the world, and keep alive the old tradition of her intellectual eminence.

But, in the majority of cases, these men are what they are in virtue of their native intellectual force, and of a strength of character which will not recognize impediments. They are not trained in the courts of the Temple of Science, but storm the walls of that edifice in all sorts of irregular ways, and with much loss of time and power, in order to obtain their legitimate positions.

Our universities not only do not encourage such men; do not offer them positions in which it should be their highest duty to do thoroughly that which they are most capable of doing; but, as far as possible, university training shuts out of the minds of those among them, who are subjected to it, the prospect that there is anything in the world for which they are specially fitted. Imagine the success of the attempt to still the intellectual hunger of any of the men I have mentioned, by putting before him, as the object of existence, the successful mimicry of the measure of a Greek song, or the roll of Ciceronian prose. Imagine how much success would be likely to attend the attempt to persuade such men that the education which leads to perfection in such elegancies is alone to be called culture, while the facts of history, the process of thought, the conditions of moral and social existence, and the laws of physical nature are left to be dealt with as they may by outside barbarians!

It is not thus that the German universities, from being beneath notice a century ago, have become what they are now — the most intensely cultivated and the most productive intellectual corporations the world has ever seen.

The student who repairs to them sees in the list of classes and of professors a fair picture of the world of knowledge. Whatever he needs to know there is some one ready to teach him, some one competent to discipline him in the way of learning; whatever his special bent, let him but be able and diligent, and in due time he shall find distinction and a career. Among his professors he sees men whose names are known and revered throughout the civilised world; and their living example infects him with a noble ambition, and a love for the spirit of work.

The Germans dominate the intellectual world by virtue of the same simple secret as that which made Napoleon the master of old Europe. They have declared *la carrière ouverte aux talents*, and every Bursch marches with a professor's gown in his knapsack. Let him become a great scholar, or man of science, and ministers will compete for his services. In Germany they do not leave the chance of his holding the office he would render illustrious to the tender mercies of a hot canvass, and the final wisdom of a mob of country parsons.

In short, in Germany, the universities are exactly what the Rector of Lincoln and the Commissioners tell us the English universities are not; that is to say, corporations "of learned men devoting their lives to the cultivation of science, and the direction of academical education." They are not "boarding schools for youths," nor clerical seminaries; but institutions for the higher culture of men, in which the theological faculty is of no more importance or prominence than the rest; and which are truly "universities," since they strive to represent and embody the totality of human knowledge, and to find room for all forms of intellectual activity.

May zealous and clear-headed reformers like Mr. Pattison

succeed in their noble endeavours to shape our universities towards some such ideal as this, without losing what is valuable and distinctive in their social tone! But until they have succeeded, a liberal education will be no more obtainable in our Oxford and Cambridge Universities than in our public schools.

If I am justified in my conception of the ideal of a liberal education; and if what I have said about the existing educational institutions of the country is also true, it is clear that the two have no sort of relation to one another; that the best of our schools and the most complete of our university trainings give but a narrow, one-sided, and essentially illiberal education — while the worst give what is really next to no education at all. The South London Working-Men's College could not copy any of these institutions if it would; I am bold enough to express the conviction that it ought not if it could.

For what is wanted is the reality and not the mere name of a liberal education; and this college must steadily set before itself the ambition to be able to give that education sooner or later. At present we are but beginning, sharpening our educational tools, as it were, and, except a modicum of physical science, we are not able to offer much more than is to be found in an ordinary school.

Moral and social science — one of the greatest and most fruitful of our future classes, I hope — at present lacks only one thing in our programme, and that is a teacher. A considerable want, no doubt; but it must be recollected that it is much better to want a teacher than to want the desire to learn.

Further, we need what, for want of a better name, I must call Physical Geography. What I mean is that which the Germans call *Erdkunde*. It is a description of the earth, of its place and relation to other bodies; of its general structure, and of its great features — winds, tides, mountains, plains;

of the chief forms of the vegetable and animal worlds, of the varieties of man. It is the peg upon which the greatest quantity of useful and entertaining scientific information can be suspended.

Literature is not upon the College programme; but I hope some day to see it there. For literature is the greatest of all sources of refined pleasure, and one of the great uses of a liberal education is to enable us to enjoy that pleasure. There is scope enough for the purposes of liberal education in the study of the rich treasures of our own language alone. All that is needed is direction, and the cultivation of a refined taste by attention to sound criticism. But there is no reason why French and German should not be mastered sufficiently to read what is worth reading in those languages with pleasure and with profit.

And finally, by and by, we must have History; treated not as a succession of battles and dynasties; not as a series of biographies; not as evidence that Providence has always been on the side of either Whigs or Tories; but as the development of man in times past, and in other conditions than our own.

But, as it is one of the principles of our College to be self-supporting, the public must lead, and we must follow, in these matters. If my hearers take to heart what I have said about liberal education, they will desire these things, and I doubt not we shall be able to supply them. But we must wait till the demand is made.

LITERATURE AND SCIENCE ¹

MATTHEW ARNOLD

PRACTICAL people talk with a smile of Plato and of his absolute ideas; and it is impossible to deny that Plato's ideas do often seem unpractical and impracticable, and especially when one views them in connection with the life of a great workaday world like the United States. The necessary staple of the life of such a world Plato regards with disdain; handicraft and trade and the working professions he regards with disdain; but what becomes of the life of an industrial modern community if you take handicraft and trade and the working professions out of it? The base mechanic arts and handicrafts, says Plato, bring about a natural weakness in the principle of excellence in a man, so that he cannot govern the ignoble growths in him, but nurses them, and cannot understand fostering any other. Those who exercise such arts and trades, as they have their bodies, he says, marred by their vulgar businesses, so they have their souls, too, bowed and broken by them. And if one of these uncomely people has a mind to seek self-culture and philosophy, Plato compares him to a bald little tinker, who has scraped together money, and has got his release from service, and has had a bath, and bought a new coat, and is rigged out like a bridegroom about to marry the daughter of his master who has fallen into poor and helpless estate.

Nor do the working professions fare any better than trade at the hands of Plato. He draws for us an inimitable picture of the working lawyer, and of his life of bondage; he shows

¹ From *Discourses in America*. An address delivered repeatedly during a visit to America in 1883-84.

how this bondage from his youth up has stunted and warped him, and made him small and crooked of soul, encompassing him with difficulties which he is not man enough to rely on justice and truth as means to encounter, but has recourse, for help out of them, to falsehood and wrong. And so, says Plato, this poor creature is bent and broken, and grows up from boy to man without a particle of soundness in him, although exceedingly smart and clever in his own esteem.

One cannot refuse to admire the artist who draws these pictures. But we say to ourselves that his ideas show the influence of a primitive and obsolete order of things, when the warrior caste and the priestly caste were alone in honor, and the humble work of the world was done by slaves. We have now changed all that; the modern majority consists in work, as Emerson declares; and in work, we may add, principally of such plain and dusty kind as the work of cultivators of the ground, handicraftsmen, men of trade and business, men of the working professions. Above all is this true in a great industrious community such as that of the United States.

Now education, many people go on to say, is still mainly governed by the ideas of men like Plato, who lived when the warrior caste and the priestly or philosophical class were alone in honor, and the really useful part of the community were slaves. It is an education fitted for persons of leisure in such a community. This education passed from Greece and Rome to the feudal communities of Europe, where also the warrior caste and the priestly caste were alone held in honor, and where the really useful and working part of the community, though not nominally slaves as in the pagan world, were practically not much better off than slaves, and not more seriously regarded. And how absurd it is, people end by saying, to inflict this education upon an industrious modern community, where very few indeed are persons of leisure, and the mass to be considered has not leisure, but is bound, for its own great

good, and for the great good of the world at large, to plain labor and to industrial pursuits, and the education in question tends necessarily to make men dissatisfied with these pursuits and unfitted for them!

That is what is said. So far I must defend Plato, as to plead that his view of education and studies is in the general, as it seems to me, sound enough, and fitted for all sorts and conditions of men, whatever their pursuits may be. "An intelligent man," says Plato, "will prize those studies which result in his soul getting soberness, righteousness, and wisdom, and will less value the others." I cannot consider *that* a bad description of the aim of education, and of the motives which should govern us in the choice of studies, whether we are preparing ourselves for a hereditary seat in the English House of Lords or for the pork trade in Chicago.

Still I admit that Plato's world was not ours, that his scorn of trade and handicraft is fantastic, that he had no conception of a great industrial community such as that of the United States, and that such a community must and will shape its education to suit its own needs. If the usual education handed down to it from the past does not suit it, it will certainly before long drop this and try another. The usual education in the past has been mainly literary. The question is whether the studies which were long supposed to be the best for all of us are practically the best now; whether others are not better. The tyranny of the past, many think, weighs on us injuriously in the predominance given to letters in education. The question is raised whether, to meet the needs of our modern life, the predominance ought not now to pass from letters to science; and naturally the question is nowhere raised with more energy than here in the United States. The design of abasing what is called "mere literary instruction and education," and of exalting what is called "sound, extensive, and practical scientific knowledge," is, in this intensely modern world of the United States, even more perhaps than

in Europe, a very popular design, and makes great and rapid progress.

I am going to ask whether the present movement for ousting letters from their old predominance in education, and for transferring the predominance in education to the natural sciences, whether this brisk and flourishing movement ought to prevail, and whether it is likely that in the end it really will prevail. An objection may be raised which I will anticipate. My own studies have been almost wholly in letters, and my visits to the field of the natural sciences have been very slight and inadequate, although those sciences have always strongly moved my curiosity. A man of letters, it will perhaps be said, is not competent to discuss the comparative merits of letters and natural science as means of education. To this objection I reply, first of all, that his incompetence if he attempts the discussion but is really incompetent for it, will be abundantly visible; nobody will be taken in; he will have plenty of sharp observers and critics to save mankind from that danger. But the line I am going to follow is, as you will soon discover, so extremely simple, that perhaps it may be followed without failure even by one who for a more ambitious line of discussion would be quite incompetent.

Some of you may possibly remember a phrase of mine which has been the object of a good deal of comment; an observation to the effect that in our culture, the aim being *to know ourselves and the world*, we have, as the means to this end, *to know the best which has been thought and said in the world*. A man of science, who is also an excellent writer and the very prince of debaters, Professor Huxley, in a discourse at the opening of Sir Josiah Mason's College at Birmingham, laying hold of this phrase, expanded it by quoting some more words of mine, which are these: "The civilized world is to be regarded as now being, for intellectual and spiritual purposes, one great confederation, bound to a joint action and working to a common result; and whose members have for

their proper outfit a knowledge of Greek, Roman, and Eastern antiquity, and of one another. Special local and temporary advantages being put out of account, that modern nation will in the intellectual and spiritual sphere make most progress, which most thoroughly carries out this programme."

Now on my phrase, thus enlarged, Professor Huxley remarks that when I speak of the above-mentioned knowledge as enabling us to know ourselves and the world, I assert *literature* to contain the materials which suffice for thus making us know ourselves and the world. But it is not by any means clear, says he, that after having learned all which ancient and modern literatures have to tell us, we have laid a sufficiently broad and deep foundation for that criticism of life, that knowledge of ourselves and the world, which constitutes culture. On the contrary, Professor Huxley declares that he finds himself "wholly unable to admit that either nations or individuals will really advance, if their outfit draws nothing from the stores of physical science. An army without weapons of precision, and with no particular base of operations, might more hopefully enter upon a campaign on the Rhine, than a man, devoid of a knowledge of what physical science has done in the last century, upon a criticism of life."

This shows how needful it is for those who are to discuss any matter together, to have a common understanding as to the sense of the terms they employ, — how needful, and how difficult. What Professor Huxley says implies just the reproach which is so often brought against the study of *belles lettres*, as they are called: that the study is an elegant one, but slight and ineffectual; a smattering of Greek and Latin and other ornamental things, of little use for any one whose object is to get at truth, and to be a practical man. So, too, M. Renan talks of the "superficial humanism" of a school course which treats us as if we were all going to be poets, writers, preachers, orators, and he opposes this humanism to positive science, or the critical search after truth. And there

is always a tendency in those who are remonstrating against the predominance of letters in education, to understand by letters *belles lettres*, and by *belles lettres* a superficial humanism, the opposite of science or true knowledge.

But when we talk of knowing Greek and Roman antiquity, for instance, which is the knowledge people have called the humanities, I for my part mean a knowledge which is something more than a superficial humanism, mainly decorative. "I call all teaching *scientific*," says Wolf, the critic of Homer, "which is systematically laid out and followed up to its original sources. For example: a knowledge of classical antiquity is scientific when the remains of classical antiquity are correctly studied in the original languages." There can be no doubt that Wolf is perfectly right; that all learning is scientific which is systematically laid out and followed up to its original sources, and that a genuine humanism is scientific.

When I speak of knowing Greek and Roman antiquity, therefore, as a help to knowing ourselves and the world, I mean more than a knowledge of so much vocabulary, so much grammar, so many portions of authors in the Greek and Latin languages; I mean knowing the Greeks and Romans, and their life and genius, and what they were and did in the world; what we get from them, and what is its value. That, at least, is the ideal; and when we talk of endeavoring to know Greek and Roman antiquity, as a help to knowing ourselves and the world, we mean endeavoring so to know them as to satisfy this ideal, however much we may still fall short of it.

The same also as to knowing our own and other modern nations, with the like aim of getting to understand ourselves and the world. To know the best that has been thought and said by the modern nations, is to know, says Professor Huxley, "only what modern *literatures* have to tell us; it is the criticism of life contained in modern literature." And yet "the distinctive character of our times," he urges, "lies in the vast and constantly increasing part which is played by natural

knowledge." And how, therefore, can a man, devoid of knowledge of what physical science has done in the last century, enter hopefully upon a criticism of modern life?

Let us, I say, be agreed about the meaning of the terms we are using. I talk of knowing the best which has been thought and uttered in the world; Professor Huxley says this means knowing *literature*. Literature is a large word; it may mean everything written with letters or printed in a book. Euclid's *Elements* and Newton's *Principia* are thus literature. All knowledge that reaches us through books is literature. But by literature Professor Huxley means *belles lettres*. He means to make me say, that knowing the best which has been thought and said by the modern nations is knowing their *belles lettres* and no more. And this is no sufficient equipment, he argues, for a criticism of modern life. But as I do not mean, by knowing ancient Rome, knowing merely more or less of Latin *belles lettres*, and taking no account of Rome's military, and political, and legal, and administrative work in the world; and as, by knowing ancient Greece, I understand knowing her as the giver of Greek art, and the guide to a free and right use of reason and to scientific method, and the founder of our mathematics and physics and astronomy and biology, — I understand knowing her as all this, and not merely knowing certain Greek poems, and histories, and treatises, and speeches, — so as to the knowledge of modern nations also. By knowing modern nations, I mean not merely knowing their *belles lettres*, but knowing also what has been done by such men as Copernicus, Galileo, Newton, Darwin. "Our ancestors learned," says Professor Huxley, "that the earth is the center of the visible universe, and that man is the cynosure of things terrestrial; and more especially was it inculcated that the course of nature has no fixed order, but that it could be, and constantly was, altered." But for us now, continues Professor Huxley, "the notions of the beginning and the end of the world entertained by our forefathers

are no longer credible. It is very certain that the earth is not the chief body in the material universe, and that the world is not subordinated to man's use. It is even more certain that nature is the expression of a definite order, with which nothing interferes." "And yet," he cries, "the purely classical education advocated by the representatives of the humanists in our day gives no inkling of all this!"

In due place and time I will just touch upon that vexed question of classical education; but at present the question is as to what is meant by knowing the best which modern nations have thought and said. It is not knowing their *belles lettres* merely which is meant. To know Italian *belles lettres* is not to know Italy, and to know English *belles lettres* is not to know England. Into knowing Italy and England there comes a great deal more, Galileo and Newton amongst it. The reproach of being a superficial humanism, a tincture of *belles lettres*, may attach rightly enough to some other disciplines; but to the particular discipline recommended when I proposed knowing the best that has been thought and said in the world, it does not apply. In that best I certainly include what in modern times has been thought and said by the great observers and knowers of nature.

There is, therefore, really no question between Professor Huxley and me as to whether knowing the great results of the modern scientific study of nature is not required as a part of our culture, as well as knowing the products of literature and art. But to follow the processes by which those results are reached, ought, say the friends of physical science, to be made the staple of education for the bulk of mankind. And here there does arise a question between those whom Professor Huxley calls with playful sarcasm "the Levites of culture," and those whom the poor humanist is sometimes apt to regard as its Nebuchadnezzars.

The great results of the scientific investigation of nature we are agreed upon knowing, but how much of our study are

we bound to give to the processes by which those results are reached? The results have their visible bearing on human life. But all the processes, too, all the items of fact by which those results are reached and established, are interesting. All knowledge is interesting to a wise man, and the knowledge of nature is interesting to all men. It is very interesting to know, that, from the albuminous white of the egg, the chick in the egg gets the materials for its flesh, bones, blood, and feathers; while, from the fatty yolk of the egg, it gets the heat and energy which enable it at length to break its shell and begin the world. It is less interesting, perhaps, but still it is interesting, to know that when a taper burns, the wax is converted into carbonic acid and water. Moreover, it is quite true that the habit of dealing with facts, which is given by the study of nature, is, as the friends of physical science praise it for being, an excellent discipline. The appeal, in the study of nature, is constantly to observation and experiment; not only is it said that the thing is so, but we can be made to see that it is so. Not only does a man tell us that when a taper burns the wax is converted into carbonic acid and water, as a man may tell us, if he likes, that Charon is punting his ferryboat on the river Styx, or that Victor Hugo is a sublime poet, or Mr. Gladstone the most admirable of statesmen; but we are made to see that the conversion into carbonic acid and water does actually happen. This reality of natural knowledge it is, which makes the friends of physical science contrast it, as a knowledge of things, with the humanist's knowledge, which is, they say, a knowledge of words. And hence Professor Huxley is moved to lay it down that, "for the purpose of attaining real culture, an exclusively scientific education is at least as effectual as an exclusively literary education." And a certain President of the Section for Mechanical Science in the British Association is, in Scripture phrase, "very bold," and declares that if a man, in his mental training, "has substituted litera-

ture and history for natural science, he has chosen the less useful alternative." But whether we go these lengths or not, we must all admit that in natural science the habit gained of dealing with facts is a most valuable discipline, and that every one should have some experience of it.

More than this, however, is demanded by the reformers. It is proposed to make the training in natural science the main part of education, for the great majority of mankind at any rate. And here, I confess, I part company with the friends of physical science, with whom up to this point I have been agreeing. In differing from them, however, I wish to proceed with the utmost caution and diffidence. The smallness of my own acquaintance with the disciplines of natural science is ever before my mind, and I am fearful of doing these disciplines an injustice. The ability and pugnacity of the partisans of natural science make them formidable persons to contradict. The tone of tentative inquiry, which befits a being of dim faculties and bounded knowledge, is the tone I would wish to take and not to depart from. At present it seems to me, that those who are for giving to natural knowledge, as they call it, the chief place in the education of the majority of mankind, leave one important thing out of their account: the constitution of human nature. But I put this forward on the strength of some facts not at all recondite, very far from it; facts capable of being stated in the simplest possible fashion, and to which, if I so state them, the man of science will, I am sure, be willing to allow their due weight.

Deny the facts altogether, I think, he hardly can. He can hardly deny, that when we set ourselves to enumerate the powers which go to the building up of human life, and say that they are the power of conduct, the power of intellect and knowledge, the power of beauty, and the power of social life and manners, — he can hardly deny that this scheme, though drawn in rough and plain lines enough, and not pretending to scientific exactness, does yet give a fairly true

representation of the matter. Human nature is built up by these powers; we have the need for them all. When we have rightly met and adjusted the claims of them all, we shall then be in a fair way for getting soberness and righteousness, with wisdom. This is evident enough, and the friends of physical science would admit it.

But perhaps they may not have sufficiently observed another thing: namely, that the several powers just mentioned are not isolated, but there is, in the generality of mankind, a perpetual tendency to relate them one to another in divers ways. With one such way of relating them I am particularly concerned now. Following our instinct for intellect and knowledge, we acquire pieces of knowledge; and presently, in the generality of men, there arises the desire to relate these pieces of knowledge to our sense for conduct, to our sense for beauty, — and there is weariness and dissatisfaction if the desire is balked. Now in this desire lies, I think, the strength of that hold which letters have upon us.

All knowledge is, as I said just now, interesting; and even items of knowledge which from the nature of the case cannot well be related, but must stand isolated in our thoughts, have their interest. Even lists of exceptions have their interest. If we are studying Greek accents, it is interesting to know that *pais* and *pas*, and some other monosyllables of the same form of declension, do not take the circumflex upon the last syllable of the genitive plural, but vary, in this respect, from the common rule. If we are studying physiology, it is interesting to know that the pulmonary artery carries dark blood and the pulmonary vein carries bright blood, departing in this respect from the common rule for the division of labor between the veins and the arteries. But every one knows how we seek naturally to combine the pieces of our knowledge together, to bring them under general rules, to relate them to principles; and how unsatisfactory and tiresome it would be

to go on forever learning lists of exceptions, or accumulating items of fact which must stand isolated.

Well, that same need of relating our knowledge, which operates here within the sphere of our knowledge itself, we shall find operating, also, outside that sphere. We experience, as we go on learning and knowing, — the vast majority of us experience, — the need of relating what we have learned and known to the sense which we have in us for conduct, to the sense which we have in us for beauty.

A certain Greek prophetess of Mantinea in Arcadia, Diotima by name, once explained to the philosopher Socrates that love, and impulse, and bent of all kinds, is, in fact, nothing else but the desire in men that good should forever be present to them. This desire for good, Diotima assured Socrates, is our fundamental desire, of which fundamental desire every impulse in us is only some one particular form. And therefore this fundamental desire it is, I suppose, — this desire in men that good should be forever present to them, — which acts in us when we feel the impulse for relating our knowledge to our sense for conduct and to our sense for beauty. At any rate, with men in general the instinct exists. Such is human nature. And the instinct, it will be admitted, is innocent, and human nature is preserved by our following the lead of its innocent instincts. Therefore, in seeking to gratify this instinct in question, we are following the instinct of self-preservation in humanity.

But, no doubt, some kinds of knowledge cannot be made to directly serve the instinct in question, cannot be directly related to the sense for beauty, to the sense for conduct. These are instrument-knowledges; they lead on to other knowledges, which can. A man who passes his life in instrument-knowledges is a specialist. They may be invaluable as instruments to something beyond, for those who have the gift thus to employ them; and they may be disciplines in themselves wherein it is useful for every one to have some

schooling. But it is inconceivable that the generality of men should pass all their mental life with Greek accents or with formal logic. My friend Professor Sylvester, who is one of the first mathematicians in the world, holds transcendental doctrines as to the virtue of mathematics, but those doctrines are not for common men. In the very Senate House and heart of our English Cambridge I once ventured, though not without an apology for my profaneness, to hazard the opinion that for the majority of mankind a little of mathematics, even, goes a long way. Of course this is quite consistent with their being of immense importance as an instrument to something else; but it is the few who have the aptitude for thus using them, not the bulk of mankind.

The natural sciences do not, however, stand on the same footing with these instrument-knowledges. Experience shows us that the generality of men will find more interest in learning that, when a taper burns, the wax is converted into carbonic acid and water, or in learning the explanation of the phenomenon of dew, or in learning how the circulation of the blood is carried on, than they find in learning that the genitive plural of *pais* and *pas* does not take the circumflex on the termination. And one piece of natural knowledge is added to another, and others are added to that, and at last we come to propositions so interesting as Mr. Darwin's famous proposition that "our ancestor was a hairy quadruped furnished with a tail and pointed ears, probably arboreal in his habits." Or we come to propositions of such reach and magnitude as those which Professor Huxley delivers, when he says that the notions of our forefathers about the beginning and the end of the world were all wrong, and that nature is the expression of a definite order with which nothing interferes.

Interesting, indeed, these results of science are, important they are, and we should all of us be acquainted with them. But what I now wish you to mark is, that we are still, when they are propounded to us and we receive them, we are still

in the sphere of intellect and knowledge. And for the generality of men there will be found, I say, to arise, when they have duly taken in the proposition that their ancestor was "a hairy quadruped furnished with a tail and pointed ears, probably arboreal in his habits," there will be found to arise an invincible desire to relate this proposition to the sense in us for conduct, and to the sense in us for beauty. But this the men of science will not do for us, and will hardly even profess to do. They will give us other pieces of knowledge, other facts, about other animals and their ancestors, or about plants, or about stones, or about stars; and they may finally bring us to those great "general conceptions of the universe, which are forced upon us all," says Professor Huxley, "by the progress of physical science." But still it will be *knowledge* only which they give us; knowledge not put for us into relation with our sense for conduct, our sense for beauty, and touched with emotion by being so put; not thus put for us, and therefore, to the majority of mankind, after a certain while, unsatisfying, wearying.

Not to the born naturalist, I admit. But what do we mean by a born naturalist? We mean a man in whom the zeal for observing nature is so uncommonly strong and eminent, that it marks him off from the bulk of mankind. Such a man will pass his life happily in collecting natural knowledge and reasoning upon it, and will ask for nothing, or hardly anything, more. I have heard it said that the sagacious and admirable naturalist whom we lost not very long ago, Mr. Darwin, once owned to a friend that for his part he did not experience the necessity for two things which most men find so necessary to them — religion and poetry; science and the domestic affections, he thought, were enough. To a born naturalist, I can well understand that this should seem so. So absorbing is his occupation with nature, so strong his love for his occupation, that he goes on acquiring natural knowledge and reasoning upon it, and has little time or

inclination for thinking about getting it related to the desire in man for conduct, the desire in man for beauty. He relates it to them for himself as he goes along, so far as he feels the need; and he draws from the domestic affections all the additional solace necessary. But then Darwins are extremely rare. Another great and admirable master of natural knowledge, Faraday, was a Sandemanian. That is to say, he related his knowledge to his instinct for conduct and to his instinct for beauty, by the aid of that respectable Scottish sectary, Robert Sandeman. And so strong, in general, is the demand of religion and poetry to have their share in a man, to associate themselves with his knowing, and to relieve and rejoice it, that probably, for one man amongst us with the disposition to do as Darwin did in this respect, there are at least fifty with the disposition to do as Faraday.

Education lays hold upon us, in fact, by satisfying this demand. Professor Huxley holds up to scorn mediæval education, with its neglect of the knowledge of nature, its poverty even of literary studies, its formal logic devoted to "showing how and why that which the Church said was true must be true." But the great mediæval universities were not brought into being, we may be sure, by the zeal for giving a jejune and contemptible education. Kings have been their nursing fathers, and queens have been their nursing mothers, but not for this. The mediæval universities came into being, because the supposed knowledge, delivered by Scripture and the Church, so deeply engaged men's hearts, by so simply, easily, and powerfully relating itself to their desire for conduct, their desire for beauty. All other knowledge was dominated by this supposed knowledge and was subordinated to it, because of the surpassing strength of the hold which it gained upon the affections of men, by allying itself profoundly with their sense for conduct, their sense for beauty.

But now, says Professor Huxley, conceptions of the uni-

verse fatal to the notions held by our forefathers have been forced upon us by physical science. Grant to him that they are thus fatal, that the new conceptions must and will soon become current everywhere, and that every one will finally perceive them to be fatal to the beliefs of our forefathers. The need of humane letters, as they are truly called, because they serve the paramount desire in men that good should be forever present to them, — the need of humane letters to establish a relation between the new conceptions, and our instinct for beauty, our instinct for conduct, is only the more visible. The middle age could do without humane letters, as it could do without the study of nature, because its supposed knowledge was made to engage its emotions so powerfully. Grant that the supposed knowledge disappears, its power of being made to engage the emotions will of course disappear along with it, — but the emotions themselves, and their claim to be engaged and satisfied, will remain. Now if we find by experience that humane letters have an undeniable power of engaging the emotions, the importance of humane letters in a man's training becomes not less, but greater, in proportion to the success of modern science in extirpating what it calls "mediæval thinking."

Have humane letters, then, have poetry and eloquence, the power here attributed to them of engaging the emotions, and do they exercise it? And if they have it and exercise it, *how* do they exercise it, so as to exert an influence upon man's sense for conduct, his sense for beauty? Finally, even if they both can and do exert an influence upon the senses in question, how are they to relate to them the results, — the modern results, — of natural science? All these questions may be asked. First, have poetry and eloquence the power of calling out the emotions? The appeal is to experience. Experience shows that for the vast majority of men, for mankind in general, they have the power. Next, do they exercise it? They do. But then, *how* do they exercise it so

as to affect man's sense for conduct, his sense for beauty? And this is perhaps a case for applying the Preacher's words: "Though a man labor to seek it out, yet he shall not find it; yea, further, though a wise man think to know it, yet shall he not be able to find it."¹ Why should it be one thing, in its effect upon the emotions, to say, "Patience is a virtue," and quite another thing, in its effect upon the emotions, to say with Homer,

τλητὸν γὰρ Μοῖραι θυμὸν θέσαν ἀνθρώποισιν — ²

"for an enduring heart have the destinies appointed to the children of men"? Why should it be one thing, in its effect upon the emotions, to say with philosopher Spinoza, *Felicitas in eo consistit quod homo suum esse conservare potest* — "Man's happiness consists in his being able to preserve his own essence," and quite another thing, in its effect upon the emotions, to say with the Gospel, "What is a man advantaged, if he gain the whole world, and lose himself, forfeit himself?" How does this difference of effect arise? I cannot tell, and I am not much concerned to know; the important thing is that it does arise, and that we can profit by it. But how, finally, are poetry and eloquence to exercise the power of relating the modern results of natural science to man's instinct for conduct, his instinct for beauty? And here again I answer that I do not know *how* they will exercise it, but that they can and will exercise it I am sure. I do not mean that modern philosophical poets and modern philosophical moralists are to come and relate for us, in express terms, the results of modern scientific research to our instinct for conduct, our instinct for beauty. But I mean that we shall find, as a matter of experience, if we know the best that has been thought and uttered in the world, we shall find that the art and poetry and eloquence of men who lived, perhaps, long

¹ *Ecclesiastes*, viii. 17.

² *Iliad*, xxiv. 49.

ago, who had the most limited natural knowledge, who had the most erroneous conceptions about many important matters, we shall find that this art, and poetry, and eloquence, have in fact not only the power of refreshing and delighting us, they have also the power, — such is the strength and worth, in essentials, of their authors' criticism of life, — they have a fortifying, and elevating, and quickening, and suggestive power, capable of wonderfully helping us to relate the results of modern science to our need for conduct, our need for beauty. Homer's conceptions of the physical universe were, I imagine, grotesque; but really, under the shock of hearing from modern science that "the world is not subordinated to man's use, and that man is not the cynosure of things terrestrial," I could, for my own part, desire no better comfort than Homer's line which I quoted just now,

τλητὸν γὰρ Μοῖραι θυμὸν θέσαν ἀνθρώποισιν —

"for an enduring heart have the destinies appointed to the children of men!"

And the more that men's minds are cleared, the more that the results of science are frankly accepted, the more that poetry and eloquence come to be received and studied as what in truth they really are, — the criticism of life by gifted men, alive and active with extraordinary power at an unusual number of points; — so much the more will the value of humane letters, and of art also, which is an utterance having a like kind of power with theirs, be felt and acknowledged, and their place in education be secured.

Let us therefore, all of us, avoid indeed as much as possible any invidious comparison between the merits of humane letters, as means of education, and the merits of the natural sciences. But when some President of a Section for Mechanical Science insists on making the comparison, and tells us that "he who in his training has substituted literature and history for natural science has chosen the less useful alterna-

tive," let us make answer to him that the student of humane letters only, will, at least, know also the great general conceptions brought in by modern physical science; for science, as Professor Huxley says, forces them upon us all. But the student of the natural sciences only, will, by our very hypothesis, know nothing of humane letters; not to mention that in setting himself to be perpetually accumulating natural knowledge, he sets himself to do what only specialists have in general the gift for doing genially. And so he will probably be unsatisfied, or at any rate incomplete, and even more incomplete than the student of humane letters only.

I once mentioned in a school report, how a young man in one of our English training colleges having to paraphrase the passage in *Macbeth* beginning,

Canst thou not minister to a mind diseased?

turned this line into, "Can you not wait upon the lunatic?" And I remarked what a curious state of things it would be, if every pupil of our national schools knew, let us say, that the moon is two thousand one hundred and sixty miles in diameter, and thought at the same time that a good paraphrase for

Canst thou not minister to a mind diseased?

was, "Can you not wait upon the lunatic?" If one is driven to choose, I think I would rather have a young person ignorant about the moon's diameter, but aware that "Can you not wait upon the lunatic?" is bad, than a young person whose education had been such as to manage things the other way.

Or to go higher than the pupils of our national schools. I have in my mind's eye a member of our British Parliament who comes to travel here in America, who afterwards relates his travels, and who shows a really masterly knowledge of the geology of this great country and of its mining capabilities, but who ends by gravely suggesting that the United States should borrow a prince from our Royal Family, and

should make him their king, and should create a House of Lords of great landed proprietors after the pattern of ours; and then America, he thinks, would have her future happily and perfectly secured. Surely, in this case, the President of the Section for Mechanical Science would himself hardly say that our member of Parliament, by concentrating himself upon geology and mineralogy, and so on, and not attending to literature and history, had "chosen the more useful alternative."

If then there is to be separation and option between humane letters on the one hand, and the natural sciences on the other, the great majority of mankind, all who have not exceptional and overpowering aptitudes for the study of nature, would do well, I cannot but think, to choose to be educated in humane letters rather than in the natural sciences. Letters will call out their being at more points, will make them live more.

I said that before I ended I would just touch on the question of classical education, and I will keep my word. Even if literature is to retain a large place in our education, yet Latin and Greek, say the friends of progress, will certainly have to go. Greek is the grand offender in the eyes of these gentlemen. The attackers of the established course of study think that against Greek, at any rate, they have irresistible arguments. Literature may perhaps be needed in education, they say; but why on earth should it be Greek literature? Why not French or German? Nay, "has not an Englishman models in his own literature of every kind of excellence?" As before, it is not on any weak pleadings of my own that I rely for convincing the gainsayers; it is on the constitution of human nature itself, and on the instinct of self-preservation in humanity. The instinct for beauty is set in human nature, as surely as the instinct for knowledge is set there, or the instinct for conduct. If the instinct for beauty is served by Greek literature and art as it is served by no other literature

and art, we may trust to the instinct of self-preservation in humanity for keeping Greek as part of our culture. We may trust to it for even making the study of Greek more prevalent than it is now. Greek will come, I hope, some day to be studied more rationally than at present; but it will be increasingly studied as men increasingly feel the need in them for beauty, and how powerfully Greek art and Greek literature can serve this need. Women will again study Greek, as Lady Jane Grey did; I believe in that chain of forts, with which the fair host of the Amazons are now engirdling our English universities; I find that here in America, in colleges like Smith College in Massachusetts, and Vassar College in the State of New York, and in the happy families of the mixed universities out West, they are studying it already.

Defuit una mihi symmetria prisca, — “The antique symmetry was the one thing wanting to me,” said Leonardo da Vinci; and he was an Italian. I will not presume to speak for the Americans but I am sure that, in the Englishman, the want of this admirable symmetry of the Greeks is a thousand times more great and crying than in any Italian. The results of the want show themselves most glaringly, perhaps, in our architecture, but they show themselves, also, in all our art. *Fit details strictly combined, in view of a large general result nobly conceived*; that is just the beautiful *symmetria prisca* of the Greeks, and it is just where we English fail, where all our art fails. Striking ideas we have, and well-executed details we have; but that high symmetry which, with satisfying and delightful effect, combines them, we seldom or never have. The glorious beauty of the Acropolis at Athens did not come from single fine things stuck about on that hill, a statue here, a gateway there; — no, it arose from all things being perfectly combined for a supreme total effect. What must not an Englishman feel about our deficiencies in this respect, as the sense for beauty, whereof this

symmetry is an essential element, awakens and strengthens within him! what will not one day be his respect and desire for Greece and its *symmetria prisca*, when the scales drop from his eyes as he walks the London streets, and he sees such a lesson in meanness as the Strand, for instance, in its true deformity! But here we are coming to our friend Mr. Ruskin's province, and I will not intrude upon it, for he is its very sufficient guardian.

And so we at last find, it seems, we find flowing in favor of the humanities the natural and necessary stream of things, which seemed against them when we started. The "hairy quadruped furnished with a tail and pointed ears, probably arboreal in his habits," this good fellow carried hidden in his nature, apparently, something destined to develop into a necessity for humane letters. Nay, more; we seem finally to be even led to the further conclusion that our hairy ancestor carried in his nature, also, a necessity for Greek.

And therefore, to say the truth, I cannot really think that humane letters are in much actual danger of being thrust out from their leading place in education, in spite of the array of authorities against them at this moment. So long as human nature is what it is, their attractions will remain irresistible. As with Greek, so with letters generally: they will some day come, we may hope, to be studied more rationally, but they will not lose their place. What will happen will rather be that there will be crowded into education other matters besides, far too many; there will be, perhaps, a period of unsettlement and confusion and false tendency; but letters will not in the end lose their leading place. If they lose it for a time, they will get it back again. We shall be brought back to them by our wants and aspirations. And a poor humanist may possess his soul in patience, neither strive nor cry, admit the energy and brilliancy of the partisans of physical science, and their present favor with the public, to be far greater than his own, and still have a happy faith

that the nature of things works silently on behalf of the studies which he loves, and that, while we shall all have to acquaint ourselves with the great results reached by modern science, and to give ourselves as much training in its disciplines as we can conveniently carry, yet the majority of men will always require humane letters; and so much the more, as they have the more and the greater results of science to relate to the need in man for conduct, and to the need in him for beauty.

THE SIGNIFICANCE OF THE FRONTIER IN AMERICAN HISTORY ¹

FREDERICK J. TURNER

IN a bulletin of the Superintendent of the Census for 1890 appear these significant words: "Up to and including 1880 the country had a frontier of settlement, but at present the unsettled area has been so broken into by isolated bodies of settlement that there can hardly be said to be a frontier line. In the discussion of its extent, its westward movement, etc., it cannot, therefore, any longer have a place in the census reports." This brief official statement marks the closing of a great historic movement. Up to our own day American history has been in a large degree the history of the colonization of the West. The existence of an area of free land, its continuous recession, and the advance of American settlement westward explain American development.

Behind institutions, behind constitutional forms and modifications, lie the vital forces that call these organs into life and shape them to meet changing conditions. The peculiarity of American institutions is the fact that they have been compelled to adapt themselves to the changes of an expanding people — to the changes involved in crossing a continent, in winning a wilderness, and in developing at each area of this progress out of the primitive economic and political conditions of the frontier into the complexity of city life. Said Calhoun in 1817, "We are great, and rapidly — I was about to say fearfully — growing!" So saying, he

¹ Reprinted, by courtesy of the author and publisher, from the *Fifth Yearbook of the National Herbart Society* (University of Chicago Press, 1899). First edition printed in *Report of American Historical Association for 1893*.

touched the distinguishing feature of American life. All people show development; the germ theory of politics has been sufficiently emphasized. In the case of most nations, however, the development has occurred in a limited area; and if the nation has expanded, it has met other growing peoples whom it has conquered. But in the case of the United States we have a different phenomenon. Limiting our attention to the Atlantic coast, we have the familiar phenomenon of the evolution of institutions in a limited area, such as the rise of representative government; the differentiation of simple colonial governments into complex organs; the progress from primitive industrial society, without division of labor, up to manufacturing civilization. But we have in addition to this a recurrence of the process of evolution in each western area reached in the process of expansion. Thus American development has exhibited not merely advance along a single line, but a return to primitive conditions on a continually advancing frontier line, and a new development for that area. American social development has been continually beginning over again on the frontier. This perennial rebirth, this fluidity of American life, this expansion westward with its new opportunities, its continuous touch with the simplicity of primitive society, furnish the forces dominating American character. The true point of view in the history of this nation is not the Atlantic coast: it is the great West. Even the slavery struggle, which is made so exclusive an object of attention by some historians, occupies its important place in American history because of its relation to westward expansion.

In this advance, the frontier is the outer edge of the wave, — the meeting-point between savagery and civilization. Much has been written about the frontier from the point of view of border warfare and the chase, but as a field for the serious study of the economist and the historian it has been neglected.

The American frontier is sharply distinguished from the European frontier, — a fortified boundary line running through dense populations. The most significant thing about the American frontier is, that it lies at the hither edge of free land. In the census reports it is treated as the margin of that settlement which has a density of two or more to the square mile. The term is an elastic one, and for our purposes does not need sharp definition. We shall consider the whole frontier belt, including the Indian country and the outer margin of the "settled area" of the census reports. This paper will make no attempt to treat the subject exhaustively; its aim is simply to call attention to the frontier as a fertile field for investigation, and to suggest some of the problems which arise in connection with it.

In the settlement of America we have to observe how European life entered the continent, and how America modified and developed that life and reacted on Europe. Our early history is the history of European germs developing in an American environment. Too exclusive attention has been paid by institutional students to the Germanic origins, too little to the American factors. The frontier is the line of most rapid and effective Americanization. The wilderness masters the colonist. It finds him a European in dress, industries, tools, modes of travel, and thought. It takes him from the railroad car and puts him in the birch canoe. It strips off the garments of civilization and arrays him in the hunting shirt and moccasin. It puts him in the log cabin of the Cherokee and Iroquois and runs an Indian palisade around him. Before long he has gone to planting Indian corn and plowing with a sharp stick; he shouts the war cry and takes the scalp in orthodox Indian fashion. In short, at the frontier the environment is at first too strong for the man. He must accept the conditions which it furnishes, or perish, and so he fits himself into the Indian clearings and follows the Indian trails. Little by little he transforms the

wilderness, but the outcome is not the old Europe, not simply the development of Germanic germs, any more than the first phenomenon was a case of reversion to the Germanic mark. The fact is, that here is a new product that is American. At first, the frontier was the Atlantic coast. It was the frontier of Europe in a very real sense. Moving westward, the frontier became more and more American. As successive terminal moraines result from successive glaciations, so each frontier leaves its traces behind it, and when it becomes a settled area the region still partakes of the frontier characteristics. Thus the advance of the frontier has meant a steady movement away from the influence of Europe, a steady growth of independence on American lines. And to study this advance, the men who grew up under these conditions, and the political, economic, and social results of it, is to study the peculiarly American part of our history.

Let us then grasp the conception of American society steadily expanding into new areas. How important it becomes to watch the stages, the processes, and the results of this advance! The conception will be found to revolutionize our study of American history.

Stages of Frontier Advance

In the Report on Population of the United States of the Eleventh Census, Part I, the student will find a series of maps representing the advance of population at each census period since 1790. By a consideration of these maps in connection with a relief map of the United States, and with the Reconnaissance Map of the United States showing the distribution of the geologic system (Fourteenth Annual Report of the United States Geological Survey, plate ii), and with the Contour Map of the United States (in blue and brown only, without culture data, published by the United States Geological Survey), it will become plain that for an adequate comprehension of the course of American history,

it is necessary to study the process by which the advancing flood of settlement flowed into the successive physiographic areas. We must observe also how these areas affected the life of the emigrants from the older sections and from Europe.

When one examines these census maps by the side of Major Powell's map showing the physiographic regions of the United States,¹ he comprehends the fact that there are American sections, neither defined by state lines, nor by the old divisions of New England, middle region, south, and west; he perceives that, in some respects, the map of the United States may be likened to the map of Europe; that the great physiographic provinces which have been won by civilization are economically and socially comparable to nations of the Old World. The study of the stages of frontier advance thus becomes the fascinating examination of the successive evolution of peculiar economic and social countries, or provinces, each with its own inheritance, its own contributions, and individuality.

Such a study of the moving frontier will show how, after the tide-water section was settled below the fall line² in the seventeenth century, a combined stream along the Great Valley and up the southern rivers that drain into the Atlantic, filled in the Piedmont region. This process occupied the first half of the eighteenth century. In the same period, settlement was ascending the Connecticut and the Housatonic in New England, and the Mohawk in New York. These river valleys, walled by the mountains and enriched with fluvial soils, became the outlet for increasing population, and they directed the flow of settlement. Thus two rival currents of settlement were already started by the middle of the eighteenth century. New England's stream was almost pure native stock. The stream that followed the Great Valley and occupied the Piedmont was dominantly Scotch-Irish and German.

¹ *Physiography of the United States*, pp. 98-99.

² See Powell, *Physiography of the United States*, pp. 73-74.

In vain the king attempted to check this advance by his proclamation of 1763, forbidding settlements beyond the sources of the Atlantic rivers. Just before the Revolution settlement reached and followed the "Western Waters" (the streams that, rising near the sources of the Atlantic rivers, cut their way through the mountains to join the Ohio).¹ The limestone soils, so welcome to the farmer, were influential in determining this advance. The limestone belt that floors the northern part of the Great Valley in Pennsylvania, Maryland, and Virginia, had tempted settlers along its path and into the Piedmont. The limestone flooring of the Tennessee Valley now attracted settlers to eastern Tennessee. Thence, by Cumberland Gap, or down the Ohio from the north, the flood poured into the limestone areas of Kentucky and Tennessee, known as the Blue Grass lands.

By the close of the Revolution settlement in Kentucky and Tennessee was almost coterminous with the limestone formations, as may be seen by comparing the map of the census of 1790 with the map showing the distribution of the geologic system of the United States. These outlying islands of settlement, separated by wilderness and mountains from the frontier border of the settled area of the coast, had important effects upon American diplomatic, military, and economic history. In the Revolutionary era the frontier communities beyond the mountains attempted to establish states of their own, on democratic lines.² The West as a self-conscious section began to evolve,³ and the struggle for the navigation

¹ On this movement see Roosevelt, *Winning of the West*; Winsor, *Mississippi Basin*; and Winsor, *Westward Movement*. See also accounts of travelers, as cited in *Report of American Historical Association for 1893*, p. 203, and in Channing and Hart, *Guide to American History*, pp. 78-86.

² See my paper on Western State-making in the Revolutionary Era (*American Historical Review*, I, 70, 251); Alden, *New Governments West of the Alleghanies before 1780* (*Bulletin of the University of Wisconsin*).

³ Cf. *Atlantic Monthly*, September, 1896, lxxviii, 289.

of the Mississippi accented this western individualism, and made doubtful the unity of America.

By diplomacy, and by Indian wars and cessions, gradually the way was opened for the spread of settlement into western New York, and into the country north of the Ohio. New England's Connecticut Valley and Housatonic Valley settlers, overflowing their confines, poured into central and western New York between 1788 and 1820, and New England also began to settle in Ohio. The Middle States and the South sent their current of settlement into the southern part of the Northwest,¹ while settlement followed the victories of Andrew Jackson into the Southwest after the War of 1812.

By the census of 1820 the settled area included Ohio, southern Indiana and Illinois, southeastern Missouri, and about one half of Louisiana. This settled area had surrounded Indian areas, and the management of these tribes became an object of political concern. The frontier region of the time lay along the Great Lakes, where Astor's American Fur Company operated in the Indian trade,² and beyond the Mississippi, where Indian traders extended their activity even to the Rocky Mountains; Florida also furnished frontier conditions. The Mississippi River region was the scene of typical frontier settlements.³ The era of internal improve-

¹ *Atlantic Monthly*, April, 1897, lxxix, 433 *et seq.*; Roosevelt, *Winning of the West*, vol. iv; Thorpe, *Constitutional History of the People of the United States*; Dwight, *Travels* (1796-1815) [New Haven, 1821].

² Turner, *Character and Influence of the Indian Trade in Wisconsin* (*Johns Hopkins University Studies*, Series ix), pp. 61 ff.

³ Monette, *History of the Mississippi Valley*, vol. ii; Flint, *Travels and Residence in Mississippi*; Flint, *Geography and History of the Western States*; Abridgment of Debates of Congress, vii, 397, 398, 404; Holmes, *Account of the United States*; Kingdom, *America and the British Colonies* [London, 1820]; Grund, *Americans*, II, i, iii, vi (although writing in 1836, he treats of conditions that grew out of western advance from the era of 1820 to that time); Peck, *Guide for Emigrants* [Boston, 1831]; Darby, *Emigrants' Guide to Western and Southwestern States and Territories*; Dana, *Geographical Sketches in the Western Country*; Kinzie, *Waubun*; Keating, *Narrative*

ments and protective tariffs under the home-market idea opened. Its explanation is to be sought in the distribution of settlement.

The rising steam navigation¹ on western waters, the opening of the Erie Canal, and the westward extension of cotton² culture added five frontier states to the Union in this period. Grund, writing in 1836, declares: "It appears then that the universal disposition of Americans to emigrate to the western wilderness, in order to enlarge their dominion over inanimate nature, is the actual result of an expansive power which is inherent in them, and which by continually agitating all classes of society is constantly throwing a large portion of the whole population on the extreme confines of the state, in order to gain space for its development. Hardly is a new state or territory formed before the same principle manifests itself again and gives rise to a further emigration; and so it is destined to go on until a physical barrier must finally obstruct its progress."³

It was in the period between 1820 and 1850 that the forces were at work which differentiated the northwestern frontier and the southwestern frontier. In the Southwest the spread of cotton culture transformed the pioneer farmer into the great planter and slaveholder. In the Northwest, the New England and Middle State stream, followed by German immigration, took possession of the Great Lake basin, and the pioneer farmer type was continued. This section was united to New York by the Erie Canal and by the later rail-

of Long's Expedition; Schoolcraft, *Discovery of the Sources of the Mississippi River*, *Travels in the Central Portions of the Mississippi Valley*, and *Lead Mines of the Missouri*; Hurlbut, *Chicago Antiquities*; McKenney, *Tour to the Lakes*; Thomas, *Travels through the Western Country*, etc. [Auburn, N. Y., 1819]. Cf. Turner, *Rise of New West*, vols. v-viii [New York, 1906].

¹ Darby, *Emigrants' Guide*, pp. 272 ff.; Benton, *Abridgment of Debates*, vii, 397.

² Turner, *Rise of New West*, chap. iv.

³ Grund, *Americans*, ii, 8.

roads. New Orleans ceased to be the outlet of the Northwest. Thus the physiographic province included in the glaciated area embracing the Great Lake basin and New England plateau was brought, by the flow of frontier settlement, into economic, political, and social unity. In the same period the physiographic province of the Gulf plains was settled and unified by extensions of the coastal south, under the temptations of the cotton lands. The struggle for Texas and the Mexican War were later sequences of this movement.

Prior to this, the Mississippi valley had possessed a considerable degree of social and political homogeneity. By the processes just mentioned, however, the sectional division of North and South was carried beyond the Alleghenies, and the western spirit gave to the political and economic antagonisms between the old North and South sections a new rancor and aggressiveness. Both were regions of action, and they furnished the radical leaders for their respective sections in the struggle that followed.

In the middle of this century the line indicated by the present eastern boundary of Indian Territory, Nebraska, and Kansas marked the frontier of the Indian country.¹ Minnesota and Wisconsin still exhibited frontier conditions,² but

¹ Peck, *New Guide to the West*, chap. iv [Cincinnati, 1848]; Parkman, *Oregon Trail*; Hall, *The West* [Cincinnati, 1848]; Pierce, *Incidents of Western Travel*; Murray, *Travels in North America*; Lloyd, *Steamboat Directory* [Cincinnati, 1856]; "Forty Days in a Western Hotel" (Chicago), in *Putnam's Magazine*, December, 1894; Mackay, *The Western World*, II, ii, iii; Meeker, *Life in the West*; Bogen, *Germans in America* [Boston, 1851]; Olmstead, *Texas Journey*; Greeley, *Recollections of a Busy Life*; Schouler, *History of the United States*, v, 261-267; Peyton, *Over the Alleghenies and Across the Prairies* [London, 1870]; Peyton, *Suggestions on Railroad Communication with the Pacific and the Trade of China and the Indian Islands*; Benton, *Highway to the Pacific* (a speech in the United States Senate, December 16, 1850). Cf. Chittenden, *American Fur Trade*.

² A writer in the *Home Missionary* [1850], p. 239, reporting Wisconsin conditions, exclaims: "Think of this, people of the enlightened East! What an example, to come from the very frontiers of civilization!" But

the distinctive frontier of the period is found in California, where the gold discoveries had sent a sudden tide of adventurous miners, in Oregon, and in the settlements in Utah.¹ As the frontier had leaped over the Alleghenies, so now it skipped the Great Plains and the Rocky Mountains; and in the same way that the advance of the frontiersman beyond the Alleghenies had caused the rise of important questions of transportation and internal improvement, so now the settlers beyond the Rocky Mountains needed means of communication with the East, and in the furnishing of these arose the settlement of the Great Plains and the development of still another kind of frontier life. Railroads, fostered by land grants, sent an increasing tide of immigrants into the Far West. The United States army² fought a series of Indian wars in Minnesota, Dakota, and the Indian Territory; cessions made way for settlement.

By 1880 the settled area had been pushed into northern Michigan, Wisconsin, and Minnesota, along Dakota rivers, and in the Black Hills region, and was ascending the rivers of Kansas and Nebraska.³ The development of mines in Colorado had drawn isolated frontier settlements into that region, and Montana and Idaho were receiving settlers. The frontier was found in these mining camps and the ranches of the Great Plains. The superintendent of the census for 1890 reports, as previously stated, that the settlements of the West lie so scattered over the region that there can no longer be said to be a frontier line

one of the missionaries writes: "In a few years Wisconsin will no longer be considered as the West, or as an outpost of civilization, any more than western New York, or the Western Reserve."

¹ Bancroft (H. H.), *History of the Pacific States*; and *Popular Tribunals*; Hittell, *California*; Shinn, "Mining Camps"; Shinn, "Story of the Mine": *Century Magazine*, 1890, 1891.

² Rodenbough and Haskin, *Army of the United States*.

³ See *Atlantic Monthly*, lxxix, 440.

It will be noted that the frontier boundaries are physiographically significant. The fall line marked the seventeenth-century frontier; the Allegheny Mountains, that of the middle of the eighteenth century; the Mississippi, that of the last decade of the eighteenth century, and, in part, that of the first quarter of the present century. Settlement which had crept up the Missouri, the Platte, etc., by the middle of the nineteenth century stayed while the rush of gold seekers made a new frontier on the Pacific coast and in the Rocky Mountains. The boundary of the arid region (roughly the hundredth meridian) marks the most recent frontier. The conquest of the arid West will be by different processes than that of the other areas of western advance, and a different social type may be looked for in the region.

Each great western advance, thus outlined, has been accompanied by a diplomatic or military struggle against rival nations, and by a series of Indian wars and cessions.

The Frontier furnishes a Field for Comparative Study of Social Development

At the Atlantic frontier one can study the germs of processes repeated at each successive frontier. We have the complex European life sharply precipitated by the wilderness into the simplicity of primitive conditions. The first frontier had to meet its Indian question, its question of the disposition of the public domain, of the means of intercourse with older settlements, of the extension of political organization, of religious and educational activity. And the settlement of these and similar questions for one frontier served as a guide for the next. The American student needs not to go to the "prim little townships of Sleswick" for illustrations of the law of continuity and development. For example, he may study the origin of our land policies in the colonial land policy; he may see how the system grew by adapting the statutes to the

customs of the successive frontiers.¹ He may see how the mining experience in the lead regions of Wisconsin, Illinois, and Iowa was applied to the mining laws of the Rockies,² and how our Indian policy has been a series of experimentations on successive frontiers. Each tier of new states has found in the older ones material for its constitution.³ Each frontier has made similar contributions to American character, as will be discussed farther on.

But with all these similarities there are essential differences, due to the place element and the time element. It is evident that the farming frontier of the Mississippi Valley presents different conditions from the mining frontier of the Rocky Mountains. The frontier reached by the Pacific railroad, surveyed into rectangles, guarded by the United States army, and recruited by the daily immigrant ship, moves forward in a different way and at a swifter pace than the frontier reached by the birch canoe or the pack horse. The geologist traces patiently the shores of ancient seas, maps their areas, and compares the older and the newer. It would be a work worth the historian's labors to mark these various frontiers, and in detail compare one with another. Not only would there result a more adequate conception of American development and characteristics, but invaluable additions would be made to the history of society.

Loria,⁴ the Italian economist, has urged the study of colonial life as an aid in understanding the stages of European development, affirming that colonial settlement is for economic science what the mountain is for geology, bringing to light primitive stratifications. "America," he says, "has the key

¹ See the suggestive paper by Professor Jesse Macy, "The Institutional Beginnings of a Western State."

² Shinn, "Mining Camps."

³ Cf. Thorpe, in *Annals of American Academy of Political and Social Science*, September, 1891; Bryce, *American Commonwealth* [1888], ii, 689.

⁴ Loria, *Analisi della Proprietà Capitalista*, ii, 15.

to the historical enigma which Europe has sought for centuries in vain, and the land which has no history reveals luminously the course of universal history." There is much truth in this. The United States lies like a huge page in the history of society. Line by line, as we read this continental page from west to east, we find the record of social evolution. It begins with the Indian and the hunter; it goes on to tell of the disintegration of savagery by the entrance of the trader, the pathfinder of civilization; we read the annals of the pastoral stage in ranch life; the exploitation of the soil by the raising of unrotated crops of corn and wheat in sparsely settled farming communities; the intensive culture of the denser farm settlement; and finally, the manufacturing organization with city and factory system.¹ This page is familiar to the student of census statistics, but how little of it has been used by our historians. Particularly in eastern states this page is a palimpsest. What is now a manufacturing state was in an earlier decade an area of intensive farming. Earlier yet it had been a wheat area, and still earlier the "range" had attracted the cattle herder. Thus Wisconsin, now developing manufacture, is a state with varied agricultural interests. But earlier it was given over to almost exclusive grain raising, like North Dakota at the present time.

Each of these areas has had an influence in our economic and political history; the evolution of each into a different industrial stage has worked political transformations.² Wisconsin, to take an illustration, in the days when it lacked varied agriculture and complex industrial life, was a stronghold of the granger and greenback movements; but it has

¹ Cf. *Observations on the N. A. Land Company*, pp. 15, 144 [London, 1796]; Logan, *History of Upper S. C.*, i, 149-151; Turner, *Indian Trade in Wisconsin*, p. 18; Peck, *New Guide for Emigrants*, chap. iv [Boston, 1837]; Compendium, Eleventh Census, xl.

² Turner, Introduction to Libby's Ratification of the American Constitution [*Bull. of Univ. of Wis., Econ., Pol. Sci., and Hist. Series*, vol. i].

undergone an industrial transformation, and in the presidential contest of 1896 Mr. Bryan carried but three counties in the state. Again consider the history of Calhoun. His father came with the tide of Scotch-Irish pioneers that built their log cabins in the Piedmont region of the Carolinas. The young manhood of Calhoun was thoroughly western in its nationalistic and loose-construction characteristics. But the extension of cotton culture to the Piedmont, following the industrial revolution in England, superseded the pioneer by the slave-holding planter. Calhoun's ideas changed with his section, until he became the chief prophet of southern sectionalism and slavery.¹

Among isolated coves in the Appalachian Mountains, and in other out-of-the-way places, the frontier has survived, like a fossil, in a more recent social formation. The primitive economic conditions of these mountains of Tennessee, or of Georgia, for instance, enable us to comprehend some of the characteristics of the frontier of earlier days. In the *American Journal of Sociology* for July, 1898, under the title "A Retarded Frontier," Professor Vincent has described such a community.

The Atlantic frontier was compounded of fisherman, fur trader, miner, cattle raiser, and farmer. Excepting the fisherman, each type of industry was on the march toward the west, drawn by an irresistible attraction. Each passed in successive waves across the continent. Stand at Cumberland Gap and watch the procession of civilization, marching single file — the buffalo following the trail to the salt springs, the Indian, the fur trader and hunter, the cattle raiser, the pioneer farmer — and the frontier has passed by. Stand at South Pass in the Rockies a century later and see the same procession with wider intervals between. The unequal rate of advance compels us to distinguish the frontier into the

¹ Turner, *Rise of New West*, for other illustrations, and cf. *Atlantic Monthly*, April, 1897, lxxix, 441-443.

trader's frontier, the rancher's frontier, or the miner's frontier, and the farmer's frontier. When the mines and the cowpens were still near the fall line the trader's pack trains were tinkling across the Alleghenies, and the French on the Great Lakes were fortifying their posts, alarmed by the British trader's birch canoe. When the trappers scaled the Rockies the farmer was still near the mouth of the Missouri.

The Indian Trader's Frontier

Why was it that the Indian trader passed so rapidly across the continent? What effects followed from the trader's frontier? The trade was coeval with American discovery. The Norsemen, Vespucius, Verrazani, Hudson, John Smith, all trafficked for furs. The Plymouth pilgrims settled in Indian cornfields, and their first return cargo was of beaver and lumber. The records of the various New England colonies show how steadily exploration was carried into the wilderness by this trade. What is true for New England is, as would be expected, even plainer for the rest of the colonies. All along the coast from Maine to Georgia the Indian trade opened up the river courses. Steadily the trader passed westward, utilizing the older lines of French trade. The Ohio, the Great Lakes, the Mississippi, the Missouri, and the Platte, the lines of western advance, were ascended by traders. They found the passes in the Rocky Mountains and guided Lewis and Clark,¹ Frémont, and Bidwell. The explanation of the rapidity of this advance is connected with the effects of the trader on the Indian. The trading post left the unarmed tribes at the mercy of those that had purchased fire-arms, — a truth which the Iroquois Indians wrote in blood, and so the remote and unvisited tribes gave eager welcome to the trader. "The savages," wrote La Salle, "take better care of us French than of their own children; from us only

¹ But Lewis and Clark were the first to explore the route from the Missouri to the Columbia.

can they get guns and goods." This accounts for the trader's power and the rapidity of his advance. Thus the disintegrating forces of civilization entered the wilderness. Every river valley and Indian trail became a fissure in Indian society, and so that society became honeycombed. Long before the pioneer farmer appeared on the scene, primitive Indian life had passed away. The farmers met Indians armed with guns. The trading frontier, while steadily undermining Indian power by making the tribes ultimately dependent on the whites, yet, through its sale of guns, gave to the Indians increased power of resistance to the farming frontier. French colonization was dominated by its trading frontier, English colonization by its farming frontier. There was an antagonism between the two frontiers as between the two nations. Said Duquesne to the Iroquois: "Are you ignorant of the difference between the king of England and the king of France? Go see the forts that our king has established and you will see that you can still hunt under their very walls. They have been placed for your advantage in places which you frequent. The English, on the contrary, are no sooner in possession of a place than the game is driven away. The forest falls before them as they advance, and the soil is laid bare so that you can scarce find the wherewithal to erect a shelter for the night."

And yet, in spite of this opposition of the interests of the trader and the farmer, the Indian trade pioneered the way for civilization. The buffalo trail became the Indian trail, and this became the trader's "trace"; the trails widened into roads, and the roads into turnpikes, and these in turn were transformed into railroads. The same origin can be shown for important railroads of the South, the Far West, and the Dominion of Canada.¹ The trading posts reached by these

¹ The later railroads frequently deviated in important respects from the exact line of the old trails; but the statement is true in general. See *Narrative and Critical History of America*, viii, 10; Sparks, *Washington's Works*,

trails were on the sites of Indian villages which had been placed in positions suggested by nature; and these trading posts, situated so as to command the water systems of the country, have grown into such cities as Albany, Pittsburg, Detroit, Chicago, St. Louis, Council Bluffs, and Kansas City. Thus civilization in America has followed the arteries made by geology, pouring an ever richer tide through them, until at last the slender paths of aboriginal intercourse have been broadened and interwoven into the complex mazes of modern commercial lines; the wilderness has been interpenetrated by lines of civilization growing ever more numerous. It is like the steady growth of a complex nervous system for the originally simple, inert continent. If one would understand why we are to-day one nation rather than a collection of isolated states, he must study this economic and social consolidation of the country. In this progress from savage conditions lie topics for the evolutionist.¹

The effect of the Indian frontier as a consolidating agent in our history is important. From the close of the seventeenth century various intercolonial congresses have been called to treat with Indians and establish common measures of defense. Particularism was strongest in colonies with no Indian frontier. This frontier stretched along the western border like a cord of union. The Indian was a common danger, demanding united action. Most celebrated of these conferences was the Albany congress of 1754, called to treat with the Six Nations, and to consider plans of union. Even a cursory reading of the plan proposed by the congress reveals the importance of the frontier. The powers of the general council and the officers were, chiefly, the determination of peace and war with the Indians, the regulation of Indian trade, the purchase of

ix, 303, 327; Logan, *History of Upper South Carolina*, vol. i; McDonald, *Life of Kenton*, p. 72.

¹ On the effect of the fur trade in opening the routes of migration, see the author's *Character and Influence of the Indian Trade in Wisconsin*.

Indian lands, and the creation and government of new settlements as a security against the Indians. It is evident that the unifying tendencies of the Revolutionary period were facilitated by the previous coöperation in the regulation of the frontier. In this connection may be mentioned the importance of the Indian frontier in the modification of western institutions and character, and particularly, as a military training school, keeping alive the power of resistance to aggression, and developing the stalwart and rugged qualities of the frontiersman. If the reader will compare the names of the officers whose exploits at Santiago and at Manila are now in everybody's mouth, with the names of the officers in the Indian fighting of the United States, he will understand better the importance of this aspect of the frontier.¹

The Rancher's Frontier

It would not be possible in the limits of this paper to trace the other frontiers across the continent. At the close of the seventeenth century in Virginia we find vast droves of wild horses and cattle, with typical ranch life and customs. Similar conditions existed in other parts of the coast area.² Travelers of the eighteenth century found the "cow pens" among the canebrakes and pea-vine pastures of the South, and the "cow drivers" took their droves to Charleston, Philadelphia, and New York.³ Travelers at the close of the War of 1812 met droves of more than a thousand cattle and swine from the interior of Ohio going to Pennsylvania to fatten for the Phila-

¹ Colonel Leonard Wood, for example, in the Geronimo campaign under Lawton in 1886, added to his duties as surgeon the command of the infantry. Cf. *Century Magazine*, July, 1891, p. 369, and *Scribner's Magazine*, January, 1899, pp. 3-20.

² Cf. Bruce, *Economic History of Virginia in the Seventeenth Century*, i, 473-477, 540; Weeden, *Economic and Social History of New England*, i, 100, 128; Doyle, *Puritan Colonies*, ii, 19-23, 46-47.

³ Lodge, *English Colonies*, p. 152 and citations; Logan, *History of Upper South Carolina*, i, 151.

delphia market.¹ The ranges of the Great Plains, with ranch and cowboy and nomadic life, are things of yesterday and of to-day.² The experience of the Carolina cow pens guided the ranchers of Texas. One element favoring the rapid extension of the rancher's frontier is the fact that in a remote country lacking transportation facilities the product must be in small bulk, or must be able to transport itself, and the cattle raiser could easily drive his product to market. The effect of these great ranches on the subsequent agrarian history of the localities in which they existed should be studied.

The Farmer's Frontier

The maps of the census reports show an uneven advance of the farmer's frontier, with tongues of settlement pushed forward and with indentations of wilderness. In part this is due to Indian resistance, in part to the location of river valleys and passes, in part to the unequal force of the centers of frontier attraction. Among the important centers of attraction may be mentioned the following: fertile and favorably situated soils, salt springs, mines, and army posts.

Army Posts

The frontier army post, serving to protect the settlers from the Indians, has also acted as a wedge to open the Indian country, and has been a nucleus for settlement.³ In this connection mention should also be made of the government military and exploring expeditions in determining the lines of settlement. But all the more important expeditions were greatly indebted to the earliest pathmakers, the Indian

¹ Flint, *Recollections*, p. 9.

² See Wister, "Evolution of the Cow Puncher," in *Harper's Magazine*, September, 1895; Hough, *Story of the Cow Boy*; Roosevelt, *Ranch Life and the Hunting Trail*.

³ Cf. Hening's *Statutes*, ii, 433, 448; iii, 204; Benton's *View*, i, 102; ii, 70, 167; Monette, *Mississippi Valley*, i, 344.

guides, the traders and trappers, and the French voyageurs, who were inevitable parts of governmental expeditions from the days of Lewis and Clark. Each expedition was an epitome of the previous factors in western advance.

Salt Springs

In an interesting monograph, Victor Hehn¹ has traced the effect of salt upon early European development, and has pointed out how it affected the lines of settlement and the form of administration. A similar study might be made for the salt springs of the United States. The early settlers were tied to the coast by the need of salt, without which they could not preserve their meats or live in comfort. Writing in 1752, Bishop Spangenburg says of a colony for which he was seeking lands in North Carolina: "They will require salt & other necessaries which they can neither manufacture nor raise. Either they must go to Charleston, which is 300 miles distant. . . . Or else they must go to Boling's Point in V^a on a branch of the James & is also 300 miles from here . . . Or else they must go down the Roanoke — I know not how many miles — where salt is brought up from the Cape Fear."² This may serve as a typical illustration. An annual pilgrimage to the coast for salt thus became essential. Taking flocks or furs and ginseng root, the early settlers sent their pack trains after seeding time each year to the coast.³ This proved to be an important educational influence, since it was almost the only way in which the pioneer learned what was going on in the East. But when discovery was made of the salt springs of the Kanawha, and the Holston, and Kentucky,⁴

¹ Hehn, *Das Salz* [Berlin, 1873].

² Colonial Records of North Carolina, v, 3.

³ Findley, *History of the Insurrection in the Four Western Counties of Pennsylvania in the Year 1794*, p. 35 [Philadelphia, 1796].

⁴ See also McGee's paper on potable springs, as affecting settlement, in the *Fourteenth Annual Report of the United States Geological Survey*, Part ii, p. 9.

and central New York, the West began to be freed from dependence on the coast. It was in part the effect of finding these salt springs that enabled settlement to cross the mountains.

Land

The exploitation of the beasts took hunter and trader to the West, the exploitation of the grasses took the rancher West, and the exploitation of the virgin soil of the river valleys and prairies attracted the farmer. Good soils have been the most continuous attraction to the farmer's frontier. When the science of physiography is more completely related to the study of our history it will be seen how dependent that history was upon the forces that carved out the limestone valleys and deposited alluvial soils along the river courses. The land hunger of the Virginians drew them down the rivers into Carolina, in early colonial days; the pursuit of good soil took the Massachusetts men to Pennsylvania and to New York. As the eastern lands were taken up migration flowed across them to the West. Daniel Boone, the great backwoodsman, who combined the occupations of hunter, trader, cattle raiser, farmer, and surveyor — learning, probably from the traders, of the fertility of the lands on the upper Yadkin, where the traders were wont to rest as they took their way to the Indians — left his Pennsylvania home with his father, and passed down the Great Valley road to that stream. Learning from a trader whose posts were on the Red river in Kentucky of its game and rich pastures, he pioneered the way for the farmers to that region. Thence he passed to the frontier of Missouri, where his settlement was long a landmark on the frontier. Here again he helped to open the way for civilization, finding salt licks and trails and land. His son was among the earliest trappers in the passes of the Rocky mountains, and his party is said to have been the first to camp on the present site of Denver. His grandson, Colonel A. J.

Boone of Colorado, was a power among the Indians of the Rocky Mountains, and was appointed an agent by the government. Kit Carson's mother was a Boone.¹ Thus this family epitomizes the backwoodsman's advance across the continent.

The farmer's advance came in a distinct series of waves. In Peck's *New Guide to the West*, published in Boston in 1837, occurs this suggestive passage:

Generally, in all the western settlements, three classes, like the waves of the ocean, have rolled one after the other. First comes the pioneer, who depends for the subsistence of his family chiefly upon the natural growth of vegetation, called the "range," and the proceeds of hunting. His implements of agriculture are rude, chiefly of his own make, and his efforts directed mainly to a crop of corn and a "truck patch." The last is a rude garden for growing cabbage, beans, corn for roasting ears, cucumbers, and potatoes. A log cabin, and, occasionally, a stable and corncrib, and a field of a dozen acres, the timber girdled or "deadened," and fenced, are enough for his occupancy. It is quite immaterial whether he ever becomes the owner of the soil. He is the occupant for the time being, pays no rent, and feels as independent as the "lord of the manor." With a horse, cow, and one or two breeders of swine, he strikes into the woods with his family, and becomes the founder of a new country, or perhaps state. He builds his cabin, gathers around him a few other families of similar tastes and habits, and occupies until the range is somewhat subdued, and hunting a little precarious, or, which is more frequently the case, till the neighbors crowd around, roads, bridges, and fields annoy him, and he lacks elbow room. The preëmption law enables him to dispose of his cabin and cornfield to the next class of emigrants; and, to employ his own figures, he "breaks for the high timber," "clears out for the New Purchase," or migrates to Arkansas or Texas, to work the same process over.

The next class of emigrants purchase the lands, add field to field, clear out the roads, throw rough bridges over the streams, put up hewn log houses with glass windows and brick or stone chimneys, occasionally plant orchards, build mills, schoolhouses, etc., and exhibit the picture and forms of plain, frugal, civilized life.

Another wave rolls on. The men of capital and enterprise come. The settler is ready to sell out and take the advantage of the rise in property, push farther into the interior, and become, himself, a man of capital and

¹ Hale, *Daniel Boone* (pamphlet).

enterprise in turn. The small village rises to a spacious town or city; substantial edifices of brick, extensive fields, orchards, gardens, colleges, and churches are seen. Broadcloths, silks, leghorns, crapes, and all the refinements, luxuries, elegancies, frivolities, and fashions are in vogue. Thus wave after wave is rolling westward; the real Eldorado is still further on.

A portion of the two first classes remain stationary amidst the general movement, improve their habits and condition, and rise in the scale of society.

The writer has traveled much amongst the first class, the real pioneers. He has lived many years in connection with second grade; and now the third wave is sweeping over large districts of Indiana, Illinois, and Missouri. Migration has become almost a habit in the West. Hundreds of men can be found, not over fifty years of age, who have settled for the fourth, fifth, or sixth time on a new spot. To sell out and remove only a few hundred miles makes up a portion of the variety of backwoods life and manners.¹

Omitting those of the pioneer farmers who move from the love of adventure, the advance of the more steady farmer is easy to understand. Obviously the immigrant was attracted by the cheap lands of the frontier, and even the native farmer felt their influence strongly. Year by year the farmers who lived on soil whose returns were diminished by unrotated crops were offered the virgin soil of the frontier at nominal prices. Their growing families demanded more lands, and these were dear. The competition of the unexhausted, cheap, and easily tilled prairie lands compelled the farmer either to go West and continue the exhaustion of the soil on a new frontier, or to adopt intensive culture. Thus the census of 1890 shows, in the Northwest, many counties in which there is an absolute or a relative decrease of population. These states have been sending farmers to advance the frontier on

¹ Cf. Baily, *Tour in the Unsettled Parts of North America*, pp. 217-219 [London, 1856], where a similar analysis is made for 1796. See also Collot, *Journey in North America*, p. 109 [Paris, 1826]; *Observations on the North American Land Company*, pp. xv, 144 [London, 1796]; Logan, *History of Upper South Carolina*; Murat, *Moral and Political Sketch of the United States* [London, 1833] (also under the title *America and Americans* [New York, 1849]); Dwight, *Travels*, ii, 459; iv, 32; Roosevelt, *Winning of the West*, iii, 5.

the plains, and have themselves begun to turn to intensive farming and to manufacture. A decade before this, Ohio had shown the same transition stage. The demand for land and the love of wilderness freedom drew the frontier ever onward. The sectional aspects of the agricultural frontier demand historical study. The United States Department of Agriculture has published two bulletins (Nos. 10 and 11, of the Division of Biological Survey), which give maps showing the *Life Zones and Crop Zones of the United States*, and the *Geographic Distribution of Cereals in North America*. The census volume on agriculture contains other maps showing the distribution of various crops and products. As the farmer's frontier advanced westward it reached and traversed these natural physiographic areas. The history of the farmer's frontier is in part a history of the struggle between these natural conditions and the custom of the farmer to raise the crops and use the methods of the other regions which he has left. The tragedy of the occupation of the arid tract, where the optimism of the pioneer farmer met its first rude rebuff by nature itself, is a case in point.

Having now roughly outlined the various kinds of frontiers, and their modes of advance, chiefly from the point of view of the frontier itself, we next inquire what were the influences on the East and on the Old World. A rapid enumeration of some of the more noteworthy effects is all that I have space for.

Composite Nationality

First, we note that the frontier promoted the formation of a composite nationality for the American people. The coast was preponderantly English, but the later tides of continental immigration flowed across to the free lands. This was the case from the early colonial days. The Scotch-Irish and the Palatine-Germans, or "Pennsylvania Dutch," furnished the dominant element in the stock of the colonial frontier. With

these peoples were also the freed indented servants, or redemptioners, who, at the expiration of their time of service, passed to the frontier. Governor Spotswood, of Virginia, writes, in 1717, "The inhabitants of our frontiers are composed generally of such as have been transported hither as servants, and, being out of their time, settle themselves where land is to be taken up and that will produce the necessaries of life with little labour."¹ Very generally these redemptioners were of non-English stock. In the crucible of the frontier the immigrants were Americanized, liberated, and fused into a mixed race, English in neither nationality nor characteristics. The process has gone on from the early days to our own. Burke and other writers in the middle of the eighteenth century believed that Pennsylvania² was "threatened with the danger of being wholly foreign in language, manners, and perhaps even inclinations." The German and Scotch-Irish elements in the frontier of the South were only less great. In the middle of the present century the German element in Wisconsin was already so considerable that leading publicists looked to the creation of a German state out of the commonwealth by concentrating their colonization.³ By the census of 1890 South Dakota had a percentage of persons of foreign parentage to total population of sixty; Wisconsin, seventy-three; Minnesota, seventy-five; and North Dakota, seventy-nine. Such examples teach us to beware of misinterpreting the fact that there is a common English speech in America into a belief that the stock is also English.

Industrial Independence

In another way the advance of the frontier decreased our dependence on England. The coast, particularly of the South,

¹ Spotswood Papers, in *Collections of Virginia Historical Society*, vols. i, ii.

² Burke, *European Settlements*, etc. [1765 ed.], ii, 200.

³ Everest, in *Wisconsin Historical Collections*, xii, 7 ff.

lacked diversified industries, and was dependent on England for the bulk of its supplies. In the South there was even a dependence on the northern colonies for articles of food. Governor Glenn, of South Carolina, writes in the middle of the eighteenth century: "Our trade with New York and Philadelphia was of this sort, draining us of all the little money and bills we could gather from other places for their bread, flour, beer, hams, bacon, and other things of their produce, all which, except beer, our new townships began to supply us with, which are settled with very industrious and thriving Germans. This no doubt diminishes the number of shipping and the appearance of our trade, but it is far from being a detriment to us."¹ Before long the frontier created a demand for merchants. As it retreated from the coast it became less and less possible for England to bring her supplies directly to the consumers' wharves, and carry away staple crops, and staple crops began to give way to diversified agriculture for a time. The effect of this phase of the frontier action upon the northern section is perceived when we realize how the advance of the frontier aroused seaboard cities like Boston, New York, and Baltimore, to engage in rivalry for what Washington called "the extensive and valuable trade of a rising empire."

Effects on National Legislation

The legislation which most developed the powers of the national government, and played the largest part in its activity, was conditioned on the frontier. Writers have discussed the subjects of tariff, land, and internal improvement as subsidiary to the slavery question. But when American history comes to be rightly viewed it will be seen that the slavery question is an incident. In the period from the end of the first half of the present century to the close of the Civil War slavery rose to primary, but far from exclusive, importance.

¹ Weston, *Documents connected with History of South Carolina*, p. 61.

But this does not justify Dr. von Holst (to take an example) in treating our constitutional history in its formative period down to 1828 in a single volume, giving six volumes chiefly to the history of slavery from 1828 to 1861, under the title *Constitutional History of the United States*. The growth of nationalism and the evolution of American political institutions were dependent on the advance of the frontier. Even so recent a writer as Rhodes, in his history of the United States since the compromise of 1850, has treated the legislation called out by the western advance as incidental to the slavery struggle.

This is a wrong perspective. The pioneer needed the goods of the coast, and so the grand series of internal improvement and railroad legislation began, with potent nationalizing effects. Over internal improvements occurred great debates, in which grave constitutional questions were discussed. Sectional groupings appear in the votes, profoundly significant for the historian.¹ Loose construction increased as the nation marched westward.² But the West was not content with bringing the farm to the factory. Under the lead of Clay — "Harry of the West" — protective tariffs were passed, with the cry of bringing the factory to the farm. The disposition of the public lands was a third important subject of national legislation influenced by the frontier.

Effects on Institutions

It is hardly necessary to do more than mention the fact that the West was a field in which new political institutions were to be created. It offered a wide opportunity for speculative creation and for adjustment of old institutions to new

¹ Cf. Libby, "Plea for the Study of Votes in Congress," in *Report of American Historical Association for 1896*, p. 223; Turner, *Rise of the New West*, Introduction.

² See, for example, the speech of Clay, in the House of Representatives, January 30, 1824.

conditions. The study of the evolution of western institutions shows how slight was the proportion of actual theoretic invention of institutions; but there is abundance of opportunity for study of the sources of the institutions actually chosen, the causes of the selection, the degree of transformation by the new conditions, and the new institutions actually produced by the new environment.

The Public Domain

The public domain has been a force of profound importance in the nationalization and development of the government. The effects of the struggle of the landed and the landless states, and of the ordinance of 1787, need no discussion.¹ Administratively the frontier called out some of the highest and most vitalizing activities of the general government. The purchase of Louisiana was perhaps the constitutional turning point in the history of the republic, inasmuch as it afforded both a new area for national legislation and the occasion of the downfall of the policy of strict construction. But the purchase of Louisiana was called out by frontier needs and demands. As frontier states accrued to the Union the national power grew. In a speech on the dedication of the Calhoun monument, Mr. Lamar explained, "In 1789 the states were the creators of the federal government; in 1861 the federal government was the creator of a large majority of the states."

When we consider the public domain from the point of view of the sale and disposal of the public lands,² we are again brought face to face with the frontier. The policy of the United States in dealing with its lands is in sharp contrast

¹ See the admirable monograph by Professor H. B. Adams, *Maryland's Influence on the Land Cessions*; and also President Welling, in *Papers American Historical Association*, iii, 411; Barrett, *Evolution of the Ordinance of 1787*.

² Sanborn, "Congressional Land Grants in Aid of Railroads," *Bulletin of the University of Wisconsin*; Donaldson, *Public Domain*.

with the European system of scientific administration. Efforts to make this domain a source of revenue, and to withhold it from emigrants in order that settlement might be compact, were in vain. The jealousy and the fears of the East were powerless in the face of the demands of the frontiersmen. John Quincy Adams was obliged to confess: "My own system of administration, which was to make the national domain the inexhaustible fund for progressive and unceasing internal improvement, has failed." The reason is obvious; a system of administration was not what the West demanded; it wanted land. Adams states the situation as follows: "The slaveholders of the South have bought the coöperation of the western country by the bribe of the western lands, abandoning to the new western states their own proportion of the public property and aiding them in the design of grasping all the lands into their own hands. Thomas H. Benton was the author of this system, which he brought forward as a substitute for the American system of Mr. Clay, and to supplant him as the leading statesman of the West. Mr. Clay, by his tariff compromise with Mr. Calhoun, abandoned his own American system. At the same time he brought forward a plan for distributing among all the states of the Union the proceeds of the sales of the public lands. His bill for that purpose passed both houses of Congress, but was vetoed by President Jackson, who, in his annual message of December, 1832, formally recommended that all public lands should be gratuitously given away to individual adventurers and to the states in which the lands are situated.¹

"No subject," said Henry Clay, "which has presented itself to the present, or perhaps any preceding, Congress, is of greater magnitude than that of the public lands." When we consider the far-reaching effects of the government's land policy upon political, economic, and social aspects of American life, we are disposed to agree with him. But this legislation was

¹ J. Q. Adams, *Memoirs*, ix, 247, 248.

framed under frontier influences, and under the lead of western statesmen like Benton and Jackson. Said Senator Scott, of Indiana, in 1841: "I consider the preëmption law merely declaratory of the custom or common law of the settlers."

National Tendencies of the Frontier

It is safe to say that the legislation with regard to land, tariff, and internal improvements — the American system of the nationalizing Whig party — was conditioned on frontier ideas and needs. But it was not merely in legislative action that the frontier worked against the sectionalism of the coast. The economic and social characteristics of the frontier worked against sectionalism. The men of the frontier had closer resemblances to the middle region than to either of the other sections. Pennsylvania had been the seed plot of southern frontier emigration, and although she passed on her settlers along the Great Valley into the west of Virginia and the Carolinas, yet the industrial society of these southern frontiersmen was always more like that of the middle region than like that of the tide-water portion of the South, which later came to spread its industrial type throughout the South.

The middle region, entered by New York harbor, was an open door to all Europe. The tide-water part of the South represented typical Englishmen, modified by a warm climate and servile labor, and living in baronial fashion on great plantations; New England stood for a special English movement, — Puritanism. The middle region was less English than the other sections. It had a wide mixture of nationalities, a varied society, the mixed town and county system of local government, a varied economic life, many religious sects. In short, it was a region mediating between New England and the South, and the East and the West. It represented the composite nationality which the contemporary United States exhibits, that juxtaposition of non-English groups, occupying a valley or a little settlement, and presenting

reflections of the map of Europe in their variety. It was democratic and non-sectional, if not national; "easy, tolerant, and contented"; rooted strongly in material prosperity. It was typical of the modern United States. It was least sectional, not only because it lay between North and South, but also because with no barriers to shut out its frontiers from its settled region, and with a system of connecting waterways, the middle region mediated between East and West as well as between North and South. Thus it became the typically American region. Even the New Englander, who was shut out from the frontier by the middle region, tarrying in New York or Pennsylvania on his westward march, lost the acuteness of his sectionalism on the way.¹

Moreover, it must be recalled that the western and central New England settler who furnished the western movement was not the typical tide-water New Englander: he was less conservative and contented, more democratic and restless.

The spread of cotton culture into the interior of the South finally broke down the contrast between the "tide-water" region and the rest of the South, and based southern interests on slavery. Before this process revealed its results, the western portion of the South, which was akin to Pennsylvania in stock, society, and industry, showed tendencies to fall away from the faith of the fathers into internal improvement legislation and nationalism. In the Virginia convention of 1829-1830, called to revise the constitution, Mr. Leigh, of Chesterfield, one of the tide-water counties, declared:

One of the main causes of discontent which led to this convention, that which had the strongest influence in overcoming our veneration for the work of our fathers, which taught us to condemn the sentiments of Henry and Mason and Pendleton, which weaned us from our reverence for the constituted authorities of the state, was an overweening passion for internal improvement. I say this with perfect knowledge, for it has been avowed to me by gentlemen from the West

¹ Author's article in *The Ægis* [Madison, Wis.], November 4, 1892, and *Atlantic Monthly*, September, 1896, p. 294, and April, 1897, pp. 436, 441, 442.

over and over again. And let me tell the gentleman from Albemarle (Mr. Gordon) that it has been another principal object of those who set this ball of revolution in motion, to overturn the doctrine of state rights, of which Virginia has been the very pillar, and to remove the barrier she has interposed to the interference of the federal government in that same work of internal improvement, by so reorganizing the legislature that Virginia, too, may be hitched to the federal car.

It was this nationalizing tendency of the West that transformed the democracy of Jefferson into the national republicanism of Monroe and the democracy of Andrew Jackson. The West of the War of 1812, the West of Clay and Benton and Harrison and Andrew Jackson, shut off by the Middle States and the mountains from the coast sections, had a solidarity of its own with national tendencies.¹ On the tide of the Father of Waters, North and South met and mingled into a nation. Interstate migration went steadily on, — a process of cross-fertilization of ideas and institutions. The fierce struggle of the sections over slavery on the western frontier does not diminish the truth of this statement; it proves the truth of it. Slavery was a sectional trait that would not down, but in the West it could not remain sectional. It was the greatest of frontiersmen who declared: "I believe this government cannot endure permanently half slave and half free. It will become all of one thing or all of the other." Nothing works for nationalism like intercourse within the nation. Mobility of population is death to localism, and the western frontier worked irresistibly in unsettling population. The effects reached back from the frontier, and affected profoundly the Atlantic coast and even the Old World.

Growth of Democracy

But the most important effect of the frontier has been in the promotion of democracy here and in Europe. As has been indicated, the frontier is productive of individualism.

¹ Cf. Roosevelt, *Thomas Benton*, chap. i.

Complex society is precipitated by the wilderness into a kind of primitive organization based on the family. The tendency is anti-social. It produces antipathy to control, and particularly to any direct control. The taxgatherer is viewed as a representative of oppression. Professor Osgood, in an able article,¹ has pointed out that the frontier conditions prevalent in the colonies are important factors in the explanation of the American Revolution, where individual liberty was sometimes confused with absence of all effective government. The same conditions aid in explaining the difficulty of instituting a strong government in the period of the Confederacy. The frontier individualism has from the beginning promoted democracy.

The frontier states that came into the Union in the first quarter of a century of its existence came in with democratic suffrage provisions, and had reactive effects of the highest importance upon the older states whose peoples were being attracted there. An extension of the franchise became essential. It was *western* New York that forced an extension of suffrage in the constitutional convention of that state in 1821; and it was *western* Virginia that compelled the tide-water region to put a more liberal suffrage provision in the constitution framed in 1830, and to give to the frontier region a more nearly proportionate representation with the tide-water aristocracy. The rise of democracy as an effective force in the nation came in with western preponderance under Jackson and William Henry Harrison, and it meant the triumph of the frontier — with all of its good and with all of its evil element.² An interesting illustration of the tone of frontier democracy in 1830 comes from the same debates in the Virginia convention already referred to. A representative from western Virginia declared:

¹ *Political Science Quarterly*, ii, 457; Sumner, *Alexander Hamilton*, chaps. ii-vii; Turner, in *Atlantic Monthly*, January, 1903.

² Cf. Wilson, *Division and Reunion*, pp. 15, 24.

But, sir, it is not the increase of population in the West which this gentleman ought to fear. It is the energy which the mountain breeze and western habits impart to those emigrants. They are regenerated, politically I mean, sir. They soon become *working politicians*; and the difference, sir, between a *talking* and a *working* politician is immense. The Old Dominion has long been celebrated for producing great orators; the ablest metaphysicians in policy; men that can split hairs in all abstruse questions of political economy. But at home, or when they return from Congress, they have negroes to fan them asleep. But a Pennsylvania, a New York, an Ohio, or a western Virginia statesman, though far inferior in logic, metaphysics, and rhetoric to an old Virginia statesman, has this advantage, that when he returns home he takes off his coat and takes hold of the plow. This gives him bone and muscle, sir, and preserves his republican principles pure and uncontaminated.

So long as free land exists, the opportunity for a competency exists, and economic power secures political power. But the democracy born of free land, strong in selfishness and individualism, intolerant of administrative experience and education, and pressing individual liberty beyond its proper bounds, has its dangers as well as its benefits. Individualism in America has allowed a laxity in regard to governmental affairs which has rendered possible the spoils system and all the manifest evils that follow from the lack of a highly developed civic spirit. In this connection may be noted also the influence of frontier conditions in permitting inflated paper currency and wild-cat banking. The colonial and revolutionary frontier was the region whence emanated many of the worst forms of paper currency.¹ The West in the War of 1812 repeated the phenomenon on the frontier of that day, while the speculation and wild-cat banking of the period of the crisis of 1837 occurred on the new frontier belt of the next tier of states. Thus each one of the periods of paper-money projects coincides with periods when a new set of frontier communities had arisen, and coincides in area with these

¹ On the relation of frontier conditions to Revolutionary taxation, see Sumner, *Alexander Hamilton*, chap. iii.

successive frontiers, for the most part. The recent radical Populist agitation is a case in point. Many a state that now declines any connection with the tenets of the Populists itself adhered to such ideas in an earlier stage of the development of the state. A primitive society can hardly be expected to show the appreciation of the complexity of business interests in a developed society. The continual recurrence of these areas of paper-money agitation is another evidence that the frontier can be isolated and studied as a factor in American history of the highest importance.

Attempts to Check and Regulate the Frontier

The East has always feared the result of an unregulated advance of the frontier, and has tried to check and guide it. The English authorities would have checked settlement at the head waters of the Atlantic tributaries and allowed the "savages to enjoy their deserts in quiet lest the peltry trade should decrease." This called out Burke's splendid protest:

If you stopped your grants, what would be the consequence? The people would occupy without grants. They have already so occupied in many places. You cannot station garrisons in every part of these deserts. If you drive the people from one place, they will carry on their annual tillage and remove with their flocks and herds to another. Many of the people in the back settlements are already little attached to particular situations. Already they have topped the Appalachian mountains. From thence they behold before them an immense plain, one vast, rich, level meadow; a square of five hundred miles. Over this they would wander without a possibility of restraint; they would change their manners with their habits of life; they would soon forget a government by which they were disowned; would become hordes of English Tartars; and, pouring down upon your unfortified frontiers a fierce and irresistible cavalry, become masters of your governors and your counselors, your collectors and comptrollers, and of all the slaves that adhered to them. Such would, and in no long time must, be the attempt to forbid as a crime and to suppress as an evil the command and blessing of Providence, "increase and multiply." Such would be the happy result of an endeavor to keep as a lair of

wild beasts that earth which God, by an express charter, has given to the children of men.

But the English government was not alone in its desire to limit the advance of the frontier and guide its destinies. Tide-water Virginia¹ and South Carolina² gerrymandered those colonies to insure the dominance of the coast in their legislatures. Washington desired to settle a state at a time in the Northwest. In the constitutional convention of 1787 Gouverneur Morris declared that the western country would not be able to furnish men equally enlightened to share in the administration of our common interests. The busy haunts of men, not the remote wilderness, was the proper school of political talents. "If the western people get power into their hands, they will ruin the Atlantic interest. The back members are always most averse to the best measures." He desired, therefore, to fix such a rule of congressional representation that the Atlantic States could always outvote the Western.³ Jefferson would reserve from settlement the territory of his Louisiana purchase north of the thirty-second parallel, in order to offer it to the Indians in exchange for their settlements east of the Mississippi. "When we shall be full on this side," he writes, "we may lay off a range of states on the western bank from the head to the mouth, and so range after range, advancing compactly as we multiply." Madison went so far as to argue to the French minister that the United States had no interest in seeing population extend itself on the right bank of the Mississippi, but should rather fear it. When the Oregon question was under debate, in 1842, Smyth, of Virginia, would draw an unchangeable line for the limits of the United States at the outer limit of two tiers of states

¹ *Debates in the Virginia Constitutional Convention*, 1829-1830.

² Calhoun, *Works*, i, 401-406.

³ Elliot's *Debates*, v, 298. Cf. Josiah Quincy's outburst in the House of Representatives on the admission of Louisiana, January 14, 1811. See Johnston, *American Orations*, i, 145.

beyond the Mississippi, complaining that the seaboard states were being drained of the flower of their population by the bringing of too much land into market. Even Thomas Benton, the man of widest views of the destiny of the West, at this stage of his career declared that along the ridge of the Rocky mountains "the western limits of the republic should be drawn, and the statue of the fabled god Terminus should be raised upon its highest peak, never to be thrown down."¹ But the attempts to limit the boundaries, to restrict land sales and settlement, and to deprive the West of its share of political power were all in vain. Steadily the frontier of settlement advanced and carried with it individualism, democracy, and nationalism, and powerfully affected the East and the Old World.

Religious Organization

The most effective efforts of the East to regulate the frontier came through its educational and religious activity, exerted by interstate migration and by organized societies. Speaking, in 1835, Dr. Lyman Beecher declared: "It is equally plain that the religious and political destiny of our nation is to be decided in the West," and he pointed out that the population of the West "is assembled from all the states of the Union and from all the nations of Europe, and is rushing in like the waters of the flood, demanding for its moral preservation the immediate and universal action of those institutions which discipline the mind and arm, the conscience and the heart. And so various are the opinions and habits, and so recent and imperfect is the acquaintance, and so sparse are the settlements of the West, that no homogeneous public sentiment can be formed to legislate immediately into being the requisite institutions. And yet they are all needed immediately in their utmost perfection and power. A nation is being 'born in a day.' . . . But what will become of the West if her

¹ Speech in the Senate, March 1, 1825; *Register of Debates*, i, 721.

prosperity rushes up to such a majesty of power, while those great institutions linger which are necessary to form the mind and the conscience and the heart of that vast world? It must not be permitted. . . . Let no man in the East quiet himself and dream of liberty, whatever may become of the West. . . . Her destiny is our destiny."

With the appeal to the conscience of New England, he adds appeals to her fears lest other religious sects anticipate her own. The New England preacher and the school-teacher left their mark on the West. The dread of western emancipation from New England's political and economic control was paralleled by her fears lest the West cut loose from her religion. Commenting, in 1850, on reports that settlement was rapidly extending northward in Wisconsin, the editor of the *Home Missionary* writes: "We scarcely know whether to rejoice or mourn over this extension of our settlements. While we sympathize in whatever tends to increase the physical resources and prosperity of our country, we cannot forget that with all these dispersions into remote and still remoter corners of the land the supply of the means of grace is becoming relatively less and less." Acting in accordance with such ideas, home missions were established and western colleges were erected. As seaboard cities like Philadelphia, New York, and Baltimore strove for the mastery of western trade, so the various denominations strove for the possession of the West. Thus an intellectual stream from New England sources fertilized the West. Other sections sent their missionaries; but the real struggle was between sects. The contest for power and the expansive tendency furnished to the various sects by the existence of a moving frontier had important results on the character of religious organization in the United States. The multiplication of rival churches in the little frontier towns had deep and lasting social effects. The effects of western freedom and newness in producing religious *isms* is noteworthy. Illustrations of this tendency

may be seen in the development of the Millerites, Spiritualists, and Mormons of western New York in its frontier days. In general the religious aspects of the frontier deserved study.

Intellectual Traits

From the conditions of frontier life came intellectual traits of profound importance. The works of travelers along each frontier from colonial days onward describe certain common traits, and these traits have, while softening down, still persisted as survivals in the place of their origin, even when a higher social organization succeeded. The result is that to the frontier the American intellect owes its striking characteristics. That coarseness and strength combined with acuteness and inquisitiveness; that practical, inventive turn of mind, quick to find expedients; that masterful grasp of material things, lacking in the artistic, but powerful to effect great ends; that restless, nervous energy;¹ that dominant individualism, working for good and for evil, and, withal, that buoyancy and exuberance which come with freedom, — these are traits of the frontier, or traits called out elsewhere because of the existence of the frontier. We are not easily aware of the deep influence of this individualistic way of thinking upon our present conditions. It persists in the midst of a society that has passed away from the conditions that occasioned it. It makes it difficult to secure social regulation of business enterprises that are essentially public; it is a stumbling-block in the way of civil-service reform; it permeates our doctrines

¹ Colonial travelers agree in remarking on the phlegmatic characteristics of the colonists. It has frequently been asked how such a people could have developed that strained nervous energy now characteristic of them. Cf. Sumner, *Alexander Hamilton*, p. 98, and Adams, *History of the United States*, i, 60; ix, 240, 241. The transition appears to become marked at the close of the War of 1812, a period when interest centered upon the development of the West, and the West was noted for restless energy. — Grund, *Americans*, ii, 1.

of education;¹ but with the passing of the free lands a vast extension of the social tendency may be expected in America.

Ratzel, the well-known geographer, has pointed out the fact that for centuries the great unoccupied area of America furnished to the American spirit something of its own largeness. It has given a largeness of design and an optimism to American thought.² Since the days when the fleet of Columbus sailed into the waters of the New World, America has been another name for opportunity, and the people of the United States have taken their tone from the incessant expansion which has not only been open, but has even been forced upon them. He would be a rash prophet who should assert that the expansive character of American life has now entirely ceased. Movement has been its dominant fact, and, unless this training has no effect upon a people, the American energy will continually demand a wider field for its exercise.³ But never again will such gifts of free land offer themselves. For a moment, at the frontier, the bonds of custom are broken and unrestraint is triumphant. There is not *tabula rasa*. The stubborn American environment is there with its imperious summons to accept its conditions; the inherited ways of doing things are also there; and yet, in spite of environment, and in spite of custom, each frontier did indeed furnish a new field of opportunity, a gate of escape from the bondage of the past; and freshness, and confidence, and scorn of older society, impatience of its restraints and its ideas, and indifference to its lessons have accompanied the frontier. What the Mediterranean sea was to the Greeks, breaking the bond of custom,

¹ See the able paper by Professor De Garmo on "Social Aspects of Moral Education," in the *Third Yearbook of the National Herbart Society*, 1897, p. 37.

² See paper on "The West as a Field for Historical Study," in *Report of American Historical Association for 1896*, pp. 279-319.

³ The commentary upon this sentence — written in 1893 — lies in the recent history of Hawaii, Cuba, Porto Rico, the Philippines, and the Isthmian Canal.

offering new experiences, calling out new institutions and activities, that, and more, the ever-retreating frontier has been to the United States directly, and to the nations of Europe more remotely. And now, four centuries from the discovery of America, at the end of a hundred years of life under the Constitution, the frontier has gone, and with its going has closed the first period of American history.

THE FATALISM OF THE MULTITUDE ¹

JAMES BRYCE

ONE feature of thought and sentiment in the United States needs a chapter to itself because it has been by most observers of the country either ignored or confounded with a phenomenon which is at bottom quite different. This is a fatalistic attitude of mind, which, since it disposes men to acquiesce in the rule of numbers, has been, when perceived, attributed to or identified with what is commonly called the Tyranny of the Majority. The tendency to fatalism is never far from mankind. It is one of the first solutions of the riddle of the earth propounded by metaphysics. It is one of the last propounded by science. It has at all times formed the background to religions. No race is naturally less disposed to a fatalistic view of things than is the Anglo-American, with its restless self-reliant energy,

Nil actum reputans dum quid restaret agendum,

its slender taste for introspection or meditation. Nevertheless even in this people the conditions of life and politics have bred a sentiment or tendency which seems best described by the name of fatalism.

In small and rude communities, every free man, or at least every head of a household, feels his own significance and realizes his own independence. He relies on himself, he is little interfered with by neighbours or rulers.² His will and his

¹ From *The American Commonwealth* (1889 Edition), vol. ii, chap. lxxxiv, pp. 297-306; copyright. Reprinted by permission of the Macmillan Company.

² The kind of self-reliant attitude I am seeking to describe is quite a different thing from the supposed "state of nature" in which a man has

action count for something in the conduct of the affairs of the community he belongs to, yet common affairs are few compared to those in which he must depend on his own exertions. The most striking pictures of individualism that literature has preserved for us are those of the Homeric heroes, and of the even more terrible and self-reliant warriors of the Scandinavian sagas, men like Ragnar Lodbrog and Egil, son of Skallagrim, who did not regard even the gods, but trusted to their own might and main. In more developed states of society organized on an oligarchic basis, such as were the feudal kingdoms of the Middle Ages, or in socially aristocratic countries such as most parts of Europe have remained down to our own time, the bulk of the people are no doubt in a dependent condition, but each person derives a certain sense of personal consequence from the strength of his group and of the person or family at the head of it. Moreover, the upper class, being the class which thinks and writes, as well as leads in action, impresses its own type upon the character of the whole nation, and that type is still individualistic, with a strong consciousness of personal free will, and a tendency for each man, if not to think for himself, at least to value and to rely on his own opinion.

Let us suppose, however, that the aristocratic structure of society has been dissolved, that the old groups have disappeared, that men have come to feel themselves members rather of the nation than of classes, or groups, or communities within the nation, that a levelling process has destroyed the ascendancy of birth and rank, that large landed estates no longer exist, and that many persons in what was previously the humbler class are found possessed of property. Under such conditions of social equality the habit of intellectual command and individual self-confidence will have vanished

no legal relations with his fellows. It may exist among the members of a community closely united by legal ties. It was evidently strong among the early Romans, who were united by such ties into family and clan groups.

from the leading class, which creates the type of national character, and will exist nowhere in the nation.

Let us suppose, further, that political equality has gone hand in hand with the levelling down of social eminence. Every citizen enjoys the same right of electing the representatives and officials, the same right of himself becoming a representative or an official. Every one is equally concerned in the conduct of public affairs, and since no man's opinion, however great his superiority in wealth, knowledge, or personal capacity, is legally entitled to any more weight than another's, no man is entitled to set special value on his own opinion, or to expect others to defer to it; for pretensions to authority will be promptly resented. All disputes are referred to the determination of the majority, there being no legal distinction between the naturally strong and the naturally weak, between the rich and the poor, between the wise and the foolish. In such a state of things the strong man's self-confidence and sense of individual force will inevitably have been lowered, because he will feel that he is only one of many, that his vote or voice counts for no more than that of his neighbour, that he can prevail, if at all, only by keeping himself on a level with his neighbour and recognizing the latter's personality as being every whit equal to his own.

Suppose further that all this takes place in an enormously large and populous country, where the governing voters are counted by so many millions that each individual feels himself a mere drop in the ocean, the influence which he can exert privately, whether by his personal gifts or by his wealth, being confined to the small circle of his town or neighbourhood. On all sides there stretches round him an illimitable horizon; and beneath the blue vault which covers that horizon there is everywhere the same busy multitude with its clamour of mingled voices which he hears close by. In this multitude his own being seems lost. He has the sense of insignificance which overwhelms us when at night we survey the host of

heaven and know that from even the nearest star this planet of ours is invisible.

In such a country, where complete political equality is strengthened and perfected by complete social equality, where the will of the majority is absolute, unquestioned, always invoked to decide every question, and where the numbers which decide are so vast that one comes to regard them as one regards the largely working forces of nature, we may expect to find certain feelings and beliefs dominant in the minds of men.

One of these is that the majority must prevail. All free government rests on this, for there is no other way of working free government. To obey the majority is therefore both a necessity and a duty, a duty because the alternative would be ruin and the breaking-up of laws.

Out of this dogma there grows up another which is less distinctly admitted, and indeed held rather implicitly than consciously, that the majority is right. And out of both of these there grows again the feeling, still less consciously held, but not less truly operative, that it is vain to oppose or censure the majority.

It may seem that there is a long step from the first of these propositions to the second and third; and that, in fact, the very existence of a minority striving with a majority implies that there must be many who hold the majority to be wrong, and are prepared to resist it. Men do not at once abandon their views because they have been outvoted; they reiterate their views, they reorganize their party, they hope to prevail, and often do prevail in a subsequent trial of strength.

All this is doubtless involved in the very methods of popular government. But it is nevertheless true that the belief in the rights of the majority lies very near to the belief that the majority must be right. As self-government is based on the idea that each man is more likely to be right than to be wrong, and that one man's opinion must be treated as equally good

with another's, there is a presumption that when twenty thousand vote one way and twenty-one thousand another, the view of the greater number is the better view. The habit of deference to a decision actually given strengthens this presumption, and weaves it into the texture of every mind. A conscientious citizen feels that he ought to obey the determination of the majority, and naturally prefers to think that which he obeys to be right. A citizen languidly interested in the question at issue finds it easier to comply with and adopt the view of the majority than to hold out against it. A small number of men with strong convictions or warm party feeling will for a time resist. But even they feel differently towards their cause after it has been defeated from what they did while it had still a prospect of success. They know that in the same proportion in which their supporters are dismayed the majority is emboldened and confirmed in its views. It will be harder to fight a second battle than it was to fight the first, for there is (so to speak) a steeper slope of popular disapproval to be climbed. This sufficiently appears from the importance attached in self-governing countries to test elections. In England what is called a "by-election," i.e. the election of a member of Parliament to fill a casual vacancy, is not only taken by partisans as an index of their strength in the nation at large, but it if can be regarded as typical, strengthens or weakens a party by turning the minds of waverers. In the United States, when the elections in any State precede by a few weeks a presidential contest, their effect has sometimes been so great as virtually to determine that contest by filling one side with hope and the other with despondency. Those who prefer to swim with the stream are numerous everywhere, and their votes have as much weight as the votes of the keenest partisans. A man of convictions may insist that the arguments on both sides are after the polling just what they were before. But the average man will repeat his arguments with less faith, less zeal, more of a secret

fear that he may be wrong, than he did while the majority was still doubtful; and after every reassertion by the majority of its judgment, his knees grow feebler till at last they refuse to carry him into the combat.

The larger the scale on which the majority works, the more potent are these tendencies. When the scene of action is a small commonwealth, the individual voters are many of them personally known to one another, and the causes which determine their votes are understood and discounted. When it is a moderately-sized country, the towns or districts which compose it are not too numerous for reckoning to overtake and imagination to picture them, and in many cases their action can be explained by well-known reasons which may be represented as transitory. But when the theatre stretches itself to a continent, the number of voters is counted by many millions, the wings of imagination droop, and the huge voting mass ceases to be thought of as merely so many individual human beings no wiser or better than one's own neighbours. The phenomena seem to pass into the category of the phenomena of nature, governed by far-reaching and inexorable laws whose character science has only imperfectly ascertained. They inspire a sort of awe, a sense of individual impotence, like that which man feels when he contemplates the majestic and eternal forces of the inanimate world.

Such a feeling is still far stronger when it operates, not on a cohesive minority which had lately hoped, or may yet hope, to become a majority, but on a single man or small group of persons cherishing some opinion which the mass disapproves. Thus out of the mingled feelings that the multitude will prevail, and that the multitude, because it will prevail, must be right, there grows a self-distrust, a despondency, a disposition to fall into line, to acquiesce in the dominant opinion, to submit thought as well as action to the encompassing power of numbers. Now and then a resolute man will, like Athanasius, stand alone against the world. But such a man must

have, like Athanasius, some special spring of inward strength; and the difficulty of winning over others against the overwhelming weight of the multitude will, even in such a man, dull the edge of hope and enterprise. An individual seeking to make his view prevail, looks forth on his hostile fellow-countrymen as a solitary swimmer, raised high on a billow miles from land, looks over the countless waves that divide him from the shore, and quails to think how small the chance that his strength can bear him thither.

This tendency to acquiescence and submission, this sense of the insignificance of individual effort, this belief that the affairs of men are swayed by large forces whose movement may be studied but cannot be turned, I have ventured to call the Fatalism of the Multitude. It is often confounded with the tyranny of the majority, but is at bottom different, though, of course, its existence makes tyranny by the majority easier and more complete. The tyranny of the majority means, or ought to mean, for it is a phrase apt to be loosely used, the disposition of the greater number to unfairly impose their will on the smaller number. A majority is tyrannical when it cuts short the discussion needed to give the minority a fair chance of convincing it that it is wrong, or when it passes laws restricting individual freedom in matters which law need not touch, or even when it subjects to social penalties persons who disagree with it in matters not essential to the common welfare. 'But the fatalistic attitude I have been seeking to describe does not imply any exercise of power by the majority at all. It may rather seem to soften and make less odious such an exercise of power, may even dispense with that exercise, because it disposes a minority to submit without the need of a command, to spontaneously renounce its own view and fall in with the view which the majority has expressed. In the fatalism of the multitude there is neither legal nor moral compulsion; there is merely a loss of resisting power, a diminished sense of personal responsibility and of the

duty to battle for one's own opinions, such as has been bred in some peoples by the belief in an overmastering fate. It is true that the force to which the citizen of the vast democracy submits is a moral force, not that of an unapproachable Allah, nor of the unchangeable laws of matter. But it is a moral force acting on so vast a scale, and from causes so often unpredictable, that its effect on the mind of the individual may well be compared with that which religious or scientific fatalism creates.

No one will suppose that the above sketch is intended to apply literally to the United States, where in some matters legal restrictions check a majority, where local self-government gives the humblest citizen a sphere for public action, where individualism is still in many forms and directions so vigorous. An American explorer, an American settler in new lands, an American man of business pushing a great enterprise, is a being as bold and resourceful as the world has ever seen. All I seek to convey is that there are in the United States signs of such a fatalistic temper, signs which one must expect to find wherever a vast population governs itself under a system of complete social and political equality. And there exist in the American Republic several conditions which specially tend to engender such a temper.

One of these is the unbounded freedom of discussion. Every view, every line of policy, has its fair chance before the people. No one can say that audience has been denied him, and comfort himself with the hope that, when he is heard, the world will come round to him. For the sense of grievance and injustice, which so often feeds the flame of resistance in the persecuted minority, there is less cause in a country like this, where the freedom of the press, the right of public meeting, the right of association and agitation have been legally extended, and are daily exerted, more widely than anywhere else in the world. He whom the multitude condemns or ignores has no further court of appeal to look to. Rome has

spoken. His cause has been heard and judgment has gone against him.

Another is the intense faith which the Americans have in the soundness of their institutions, and in the future of their country. Foreign critics have said that they think themselves the special objects of the protecting care of Providence. If this be so, it is matter neither for surprise nor for sarcasm. They are a religious people. They are trying, and that on the largest scale, the most remarkable experiment in government the world has yet witnessed. They have more than once been surrounded by perils which affrighted the stoutest hearts, and they have escaped from these perils into peace and prosperity. There is among pious persons a deep conviction — I have often heard it expressed in sermons and prayers with evident sincerity — that the nation has been, and is being, more than other nations, guided by the hand of God. And, even when the feeling does not take a theological expression, the belief in what is called the “Mission of the Republic” for all humanity is scarcely less ardent. But the foundation of the Republic is confidence in the multitude, in its honesty and good sense, in the certainty of its arriving at right conclusions. Pessimism is the luxury of a handful; optimism is the private delight, as well as public profession, of nine hundred and ninety-nine out of every thousand, for nowhere does the individual associate himself more constantly and directly with the greatness of his country.

Now, such a faith in the people, and in the forces that sway them, disposes a man to acquiescence and submission. He cannot long hold that he is right and the multitude wrong. He cannot suppose that the country will ultimately suffer because it refuses to adopt what he urges upon it. As he comes of an energetic stock, he will use all proper means to state his views, and give them every chance of prevailing. But he submits more readily than an Englishman would do, ay, even to what an Englishman would think an injury to

his private rights. When a man's legal right has been infringed, he will confidently proceed to enforce at law his claim to redress, knowing that even against the government a just cause will prevail. But if he fails at law, the sense of his individual insignificance will still his voice. It may seem a trivial illustration to observe that when a railway train is late, or a waggon drawn up opposite a warehouse door stops the horse-car for five minutes, the passengers take the delay far more coolly and uncomplainingly than Englishmen would do. But the feeling is the same as that which makes good citizens bear with the tyranny of Bosses. It is all in the course of nature. What is an individual that he should make a fuss because he loses a few minutes, or is taxed too highly? The sense of the immense multitude around him presses down the individual; and, after all, he reflects, "things will come out right" in the end.

It is hard adequately to convey the impression which the vastness of the country, and the swift growth of its population make upon the European visitor. I well remember how it once came on me after climbing a high mountain in an Eastern State. All around was thick forest; but the setting sun lit up peaks sixty or seventy miles away, and flashed here and there on the windings of some river past a town so far off as to seem only a spot of white. I opened my map, a large map, which I had to spread upon the rocks to examine, and tried to make out, as one would have done in England or Scotland, the points in the view. The map however was useless, because the whole area of the landscape beneath me covered only two or three square inches upon it. From such a height in Scotland the eye would have ranged from sea to sea. But here when one tried to reckon how many more equally wide stretches of landscape lay between this peak and the Mississippi, which is itself only a third of the way across the continent, the calculation seemed endless and was soon abandoned. Many an Englishman comes by middle life to know nearly

all England like a glove. He has travelled on all the great railroads; there is hardly a large town in which he has not acquaintances, hardly a county whose scenery is not familiar to him. But no American can be familiar with more than a small part of his country, for his country is a continent. And all Americans live their life through under the sense of this prodigious and daily growing multitude around them, which seems vaster the more you travel, and the more you realize its uniformity.

We need not here inquire whether the fatalistic attitude I have sought to sketch is the source of more good or evil. It seems at any rate inevitable: nor does it fail to produce a sort of pleasure, for what the individual loses as an individual he seems in a measure to regain as one of the multitude. If the individual is not strong, he is at any rate as strong as any one else. His will counts for as much as any other will. He is overborne by no superiority. Most men are fitter to make part of the multitude than to strive against it. Obedience is to most sweeter than independence; the Roman Catholic Church inspires in its children a stronger affection than any form of Protestantism, for she takes their souls in charge, and assures them that, with obedience, all will be well.

That which we are presently concerned to note is how greatly such a tendency as I have described facilitates the action of opinion as a governing power, enabling it to prevail more swiftly and more completely than in countries where men have not yet learned to regard the voice of the multitude as the voice of fate. Many submit willingly; some unwillingly, yet they submit. Rarely does any one hold out and venture to tell the great majority of his countrymen that they are wrong.

Moreover public opinion acquires a solidity which strengthens the whole body politic. Questions on which the masses have made up their minds pass out of the region of practical discussion. Controversy is confined to minor topics, and

however vehemently it may rage over these, it disturbs the great underlying matters of agreement no more than a tempest stirs the depths of the Atlantic. Public order becomes more easily maintained, because individuals and small groups have learned to submit even when they feel themselves aggrieved. The man who murmurs against the world, who continues to preach a hopeless cause, incurs contempt, and is apt to be treated as a sort of lunatic. He who is too wise to murmur and too proud to go on preaching to unheeding ears, comes to think that if his doctrine is true, yet the time is not ripe for it. He may be in error; but if he is right, the world will ultimately see that he is right even without his effort. One way or another he finds it hard to believe that this vast mass and force of popular thought in which he lives and moves can be ultimately wrong.

Securus judicat orbis terrarum.

TRAFFIC¹

JOHN RUSKIN

MY good Yorkshire friends, you asked me down here among your hills that I might talk to you about this Exchange you are going to build: but earnestly and seriously asking you to pardon me, I am going to do nothing of the kind. I cannot talk, or at least can say very little, about this same Exchange. I must talk of quite other things, though not willingly; — I could not deserve your pardon, if when you invited me to speak on one subject, I *wilfully* spoke on another. But I cannot speak, to purpose, of anything about which I do not care; and most simply and sorrowfully I have to tell you, in the outset, that I do *not* care about this Exchange of yours.

If, however, when you sent me your invitation, I had answered, “I won’t come, I don’t care about the Exchange of Bradford,” you would have been justly offended with me, not knowing the reasons of so blunt a carelessness. So I have come down, hoping that you will patiently let me tell you why, on this, and many other such occasions, I now remain silent, when formerly I should have caught at the opportunity of speaking to a gracious audience.

In a word, then, I do not care about this Exchange, — because *you* don’t; and because you know perfectly well I cannot make you. Look at the essential conditions of the case, which you, as business men, know perfectly well, though perhaps you think I forget them. You are going to spend £30,000, which to you, collectively, is nothing; the buying a new coat is, as to the cost of it, a much more important matter of consideration to me than building a new Exchange is to

¹ Delivered in the Town Hall, Bradford, England.

you. But you think you may as well have the right thing for your money. You know there are a great many odd styles of architecture about; you don't want to do anything ridiculous; you hear of me, among others, as a respectable architectural man-milliner; and you send for me, that I may tell you the leading fashion; and what is, in our shops, for the moment, the newest and sweetest thing in pinnacles.

Now, pardon me for telling you frankly, you cannot have good architecture merely by asking people's advice on occasion. All good architecture is the expression of national life and character; and it is produced by a prevalent and eager national taste, or desire for beauty. And I want you to think a little of the deep significance of this word "taste"; for no statement of mine has been more earnestly or oftener controverted than that good taste is essentially a moral quality. "No," say many of my antagonists, "taste is one thing, morality is another. Tell us what is pretty: we shall be glad to know that; but we need no sermons even were you able to preach them, which may be doubted."

Permit me, therefore, to fortify this old dogma of mine somewhat. Taste is not only a part and an index of morality — it is the *ONLY* morality. The first, and last, and closest trial question to any living creature is, "What do you like?" Tell me what you like, and I'll tell you what you are. Go out into the street, and ask the first man or woman you meet, what their "taste" is, and if they answer candidly, you know them, body and soul. "You, my friend in the rags, with the unsteady gait, what do *you* like?" "A pipe and a quartern of gin." I know you. "You, good woman, with the quick step and tidy bonnet, what do you like?" "A swept hearth and a clean tea-table, and my husband opposite me, and a baby at my breast." Good, I know you also. "You, little girl with the golden hair and the soft eyes, what do you like?" "My canary, and a run among the wood hyacinths." "You, little boy with the dirty hands and the low forehead, what

do you like?" "A shy at the sparrows, and a game at pitch farthing." Good; we know them all now. What more need we ask?

"Nay," perhaps you answer: "we need rather to ask what these people and children do, than what they like. If they *do* right, it is no matter that they like what is wrong; and if they *do* wrong, it is no matter that they like what is right. Doing is the great thing; and it does not matter that the man likes drinking, so that he does not drink; nor that the little girl likes to be kind to her canary, if she will not learn her lessons; nor that the little boy likes throwing stones at the sparrows, if he goes to the Sunday School." Indeed, for a short time, and in a provisional sense, this is true. For if, resolutely, people do what is right, in time they come to like doing it. But they only are in a right moral state when they *have* come to like doing it; and as long as they don't like it, they are still in a vicious state. The man is not in health of body who is always thinking of the bottle in the cupboard, though he bravely bears his thirst; but the man who heartily enjoys water in the morning and wine in the evening, each in its proper quantity and time. And the entire object of true education is to make people not merely *do* the right things, but *enjoy* the right things — not merely industrious, but to love industry — not merely learned, but to love knowledge — not merely pure, but to love purity — not merely just, but to hunger and thirst after justice.

But you may answer or think, "Is the liking for outside ornaments, — for pictures, or statues, or furniture, or architecture, — a moral quality?" Yes, most surely, if a rightly set liking. Taste for *any* pictures or statues is not a moral quality, but taste for good ones is. Only here again we have to define the word "good." I don't mean by "good," clever — or learned — or difficult in the doing. Take a picture by Teniers, of sots quarrelling over their dice: it is an entirely clever picture; so clever that nothing in its kind has ever

been done equal to it; but it is also an entirely base and evil picture. It is an expression of delight in the prolonged contemplation of a vile thing, and delight in that is an "unmannered," or "immoral" quality. It is "bad taste" in the profoundest sense — it is the taste of the devils. On the other hand, a picture of Titian's, or a Greek statue, or a Greek coin, or a Turner landscape, expresses delight in the perpetual contemplation of a good and perfect thing. That is an entirely moral quality — it is the taste of the angels. And all delight in fine art, and all love of it, resolve themselves into simple love of that which deserves love. That deserving is the quality which we call "loveliness" — (we ought to have an opposite word, *hateliness*, to be said of the things which deserve to be hated); and it is not an indifferent nor optional thing whether we love this or that; but it is just the vital function of all our being. What we *like* determines what we *are*, and is the sign of what we are; and to teach taste is inevitably to form character.

As I was thinking over this, in walking up Fleet Street the other day, my eye caught the title of a book standing open in a book-seller's window. It was — "On the necessity of the diffusion of taste among all classes." "Ah," I thought to myself, "my classifying friend, when you have diffused your taste, where will your classes be? The man who likes what you like, belongs to the same class with you, I think. Inevitably so. You may put him to other work if you choose; but, by the condition you have brought him into, he will dislike the other work as much as you would yourself. You get hold of a scavenger, or a costermonger, who enjoyed the Newgate Calendar for literature, and 'Pop goes the Weasel' for music. You think you can make him like Dante and Beethoven? I wish you joy of your lessons; but if you do, you have made a gentleman of him: — he won't like to go back to his costermongering."

And so completely and unexceptionally is this so, that, if

I had time to-night, I could show you that a nation cannot be affected by any vice, or weakness, without expressing it, legibly, and forever, either in bad art, or by want of art; and that there is no national virtue, small or great, which is not manifestly expressed in all the art which circumstances enable the people possessing that virtue to produce. Take, for instance, your great English virtue of enduring and patient courage. You have at present in England only one art of any consequence — that is, iron-working. You know thoroughly well how to cast and hammer iron. Now, do you think in those masses of lava which you build volcanic cones to melt, and which you forge at the mouths of the Infernos you have created; do you think, on those iron plates, your courage and endurance are not written forever — not merely with an iron pen, but on iron parchment? And take also your great English vice — European vice — vice of all the world — vice of all other worlds that roll or shine in heaven, bearing with them yet the atmosphere of hell — the vice of jealousy, which brings competition into your commerce, treachery into your councils, and dishonor into your wars — that vice which has rendered for you, and for your next neighboring nation, the daily occupations of existence no longer possible, but with the mail upon your breasts and the sword loose in its sheath; so that at last, you have realized for all the multitudes of the two great peoples who lead the so-called civilization of the earth, — you have realized for them all, I say, in person and in policy, what was once true only of the rough Border riders of your Cheviot hills —

They carved at the meal
With gloves of steel,
And they drank the red wine through the helmet barr'd; —

do you think that this national shame and dastardliness of heart are not written as legibly on every rivet of your iron armor as the strength of the right hands that forged it?

Friends, I know not whether this thing be the more ludicrous or the more melancholy. It is quite unspeakably both. Suppose, instead of being now sent for by you, I had been sent for by some private gentleman, living in a suburban house, with his garden separated only by a fruit-wall from his next door neighbor's; and he had called me to consult with him on the furnishing of his drawing-room. I begin looking about me, and find the walls rather bare; I think such and such a paper might be desirable — perhaps a little fresco here and there on the ceiling — a damask curtain or so at the windows. "Ah," says my employer, "damask curtains, indeed! That's all very fine, but you know I can't afford that kind of thing just now!" "Yet the world credits you with a splendid income!" "Ah, yes," says my friend, "but do you know, at present, I am obliged to spend it nearly all in steel-traps?" "Steel-traps! for whom?" "Why, for that fellow on the other side the wall, you know: we're very good friends, capital friends; but we are obliged to keep our traps set on both sides of the wall; we could not possibly keep on friendly terms without them, and our spring guns. The worst of it is, we are both clever fellows enough; and there's never a day passes that we don't find out a new trap, or a new gun-barrel, or something; we spend about fifteen millions a year each in our traps, take it all together; and I don't see how we're to do with less." A highly comic state of life for two private gentlemen! but for two nations, it seems to me, not wholly comic? Bedlam would be comic, perhaps, if there were only one madman in it; and your Christmas pantomime is comic, when there is only one clown in it; but when the whole world turns clown, and paints itself red with its own heart's blood instead of vermilion, it is something else than comic, I think.

Mind, I know a great deal of this is play, and willingly allow for that. You don't know what to do with yourselves for a sensation: fox-hunting and cricketing will not carry

you through the whole of this unendurably long mortal life: you liked pop-guns when you were school-boys, and rifles and Armstrongs are only the same things better made: but then the worst of it is, that what was play to you when boys, was not play to the sparrows; and what is play to you now, is not play to the small birds of State neither; and for the black eagles, you are somewhat shy of taking shots at them, if I mistake not.

I must get back to the matter in hand, however. Believe me, without farther instance, I could show you, in all time, that every nation's vice, or virtue, was written in its art: the soldiery of early Greece; the sensuality of late Italy; the visionary religion of Tuscany; the splendid human energy and beauty of Venice. I have no time to do this to-night (I have done it elsewhere before now); but I proceed to apply the principle to ourselves in a more searching manner.

I notice that among all the new buildings which cover your once wild hills, churches and schools are mixed in due, that is to say, in large proportion, with your mills and mansions; and I notice also that the churches and schools are almost always Gothic, and the mansions and mills are never Gothic. Will you allow me to ask precisely the meaning of this? For, remember, it is peculiarly a modern phenomenon. When Gothic was invented, houses were Gothic as well as churches; and when the Italian style superseded the Gothic, churches were Italian as well as houses. If there is a Gothic spire to the cathedral of Antwerp, there is a Gothic belfry to the Hôtel de Ville at Brussels; if Inigo Jones builds an Italian Whitehall, Sir Christopher Wren builds an Italian St. Paul's. But now you live under one school of architecture, and worship under another. What do you mean by doing this? Am I to understand that you are thinking of changing your architecture back to Gothic; and that you treat your churches experimentally, because it does not matter what mistakes you make in a church? Or am I to understand that you

consider Gothic a preëminently sacred and beautiful mode of building, which you think, like the fine frankincense, should be mixed for the tabernacle only, and reserved for your religious services? For if this be the feeling, though it may seem at first as if it were graceful and reverent, at the root of the matter, it signifies neither more nor less than that you have separated your religion from your life.

For consider what a wide significance this fact has; and remember that it is not you only, but all the people of England, who are behaving thus just now.

You have all got into the habit of calling the church "the house of God." I have seen, over the doors of many churches, the legend actually carved, "*This* is the house of God, and this is the gate of heaven." Now, note where that legend comes from, and of what place it was first spoken. A boy leaves his father's house to go on a long journey on foot, to visit his uncle; he has to cross a wild hill-desert; just as if one of your own boys had to cross the wolds to visit an uncle at Carlisle. The second or third day your boy finds himself somewhere between Hawes and Brough, in the midst of the moors, at sunset. It is stony ground, and boggy; he cannot go one foot farther that night. Down he lies, to sleep, on Wharnside, where best he may, gathering a few of the stones together to put under his head; — so wild the place is, he cannot get anything but stones. And there, lying under the broad night, he has a dream; and he sees a ladder set up on the earth, and the top of it reaches to heaven, and the angels of God are seen ascending and descending upon it. And when he wakes out of his sleep, he says, "How dreadful is this place; surely, this is none other than the house of God, and this is the gate of heaven." This PLACE, observe; not this church; not this city; not this stone, even, which he puts up for a memorial — the piece of flint on which his head has lain. But this *place*; this windy slope of Wharnside; this moorland hollow, torrent-bitten, snow-blighted; this *any* place where

God lets down the ladder. And how are you to know where that will be? or how are you to determine where it may be, but by being ready for it always? Do you know where the lightning is to fall next? You *do* know that, partly; you can guide the lightning; but you cannot guide the going forth of the Spirit, which is as that lightning when it shines from the east to the west.

But the perpetual and insolent warping of that strong verse to serve a merely ecclesiastical purpose, is only one of the thousand instances in which we sink back into gross Judaism. We call our churches "temples." Now, you know perfectly well they are *not* temples. They have never had, never can have, anything whatever to do with temples. They are "synagogues" — "gathering places" — where you gather yourselves together as an assembly; and by not calling them so, you again miss the force of another mighty text — "Thou, when thou prayest, shalt not be as the hypocrites are; for they love to pray standing in the *churches*" [we should translate it], "that they may be seen of men. But thou, when thou prayest, enter into thy closet, and when thou hast shut thy door, pray to thy Father," — which is, not in chancel nor in aisle, but "in secret."

Now, you feel, as I say this to you — I know you feel — as if I were trying to take away the honor of your churches. Not so; I am trying to prove to you the honor of your houses and your hills; not that the Church is not sacred — but that the whole Earth is. I would have you feel, what careless, what constant, what infectious sin there is in all modes of thought, whereby, in calling your churches only "holy," you call your hearths and homes "profane"; and have separated yourselves from the heathen by casting all your household gods to the ground, instead of recognizing, in the place of their many and feeble Lares, the presence of your One and Mighty Lord and Lar.

"But what has all this to do with our Exchange?" you

ask me, impatiently. My dear friends, it has just everything to do with it; on these inner and great questions depend all the outer and little ones; and if you have asked me down here to speak to you, because you had before been interested in anything I have written, you must know that all I have yet said about architecture was to show this. The book I called "The Seven Lamps" was to show that certain right states of temper and moral feeling were the magic powers by which all good architecture, without exception, had been produced. "The Stones of Venice" had, from beginning to end, no other aim than to show that the Gothic architecture of Venice had arisen out of, and indicated in all its features, a state of pure national faith, and of domestic virtue; and that its Renaissance architecture had arisen out of, and in all its features indicated, a state of concealed national infidelity, and of domestic corruption. And now, you ask me what style is best to build in; and how can I answer, knowing the meaning of the two styles, but by another question — do you mean to build as Christians or as Infidels? And still more — do you mean to build as honest Christians or as honest Infidels? as thoroughly and confessedly either one or the other? You don't like to be asked such rude questions. I cannot help it; they are of much more importance than this Exchange business; and if they can be at once answered, the Exchange business settles itself in a moment. But, before I press them farther, I must ask leave to explain one point clearly.

In all my past work, my endeavor has been to show that good architecture is essentially religious — the production of a faithful and virtuous, not of an infidel and corrupted, people. But in the course of doing this, I have had also to show that good architecture is not *ecclesiastical*. People are so apt to look upon religion as the business of the clergy, not their own, that the moment they hear of anything depending on "religion," they think it must also have depended on the

priesthood; and I have had to take what place was to be occupied between these two errors, and fight both, often with seeming contradiction. Good architecture is the work of good and believing men; therefore, you say, at least some people say, "Good architecture must essentially have been the work of the clergy, not of the laity." No — a thousand times no; good architecture¹ has always been the work of the commonalty, *not* of the clergy. What, you say, those glorious cathedrals — the pride of Europe — did their builders not form Gothic architecture? No; they corrupted Gothic architecture. Gothic was formed in the baron's castle, and the burgher's street. It was formed by the thoughts, and hands, and powers of free citizens and warrior kings. By the monk it was used as an instrument for the aid of his superstition; when that superstition became a beautiful madness, and the best hearts of Europe vainly dreamed and pined in the cloister, and vainly raged and perished in the crusade — through that fury of perverted faith and wasted war, the Gothic rose also to its loveliest, most fantastic, and, finally, most foolish dreams; and, in those dreams, was lost.

I hope, now, that there is no risk of your misunderstanding me when I come to the gist of what I want to say to-night; — when I repeat, that every great national architecture has been the result and exponent of a great national religion. You can't have bits of it here, bits there — you must have it everywhere, or nowhere. It is not the monopoly of a clerical company — it is not the exponent of a theological dogma — it is not the hieroglyphic writing of an initiated priesthood; it is the manly language of a people inspired by resolute and common purpose, and rendering resolute and common fidelity to the legible laws of an undoubted God.

Now, there have as yet been three distinct schools of European architecture. I say, European, because Asiatic and

¹ And all other arts, for the most part; even of incredulous and secular-minded commonalties.

African architectures belong so entirely to other races and climates, that there is no question of them here; only, in passing, I will simply assure you that whatever is good or great in Egypt, and Syria, and India, is just good or great for the same reasons as the buildings on our side of the Bosphorus. We Europeans, then, have had three great religions: the Greek, which was the worship of the God of Wisdom and Power; the Mediæval, which was the Worship of the God of Judgment and Consolation; the Renaissance, which was the worship of the God of Pride and Beauty; these three we have had, — they are past, — and now, at last, we English have got a fourth religion, and a God of our own, about which I want to ask you. But I must explain these three old ones first.

I repeat, first, the Greeks essentially worshipped the God of Wisdom; so that whatever contended against their religion — to the Jews a stumbling block — was, to the Greeks, — *Foolishness*.

The first Greek idea of Deity was that expressed in the word, of which we keep the remnant in our words "*Di-urnal*" and "*Di-vine*" — the god of *Day*, Jupiter the revealer. Athena is his daughter, but especially daughter of the Intellect, springing armed from the head. We are only with the help of recent investigation beginning to penetrate the depth of meaning couched under the Athenaic symbols: but I may note rapidly, that her ægis, the mantle with the serpent fringes, in which she often, in the best statues, is represented as folding up her left hand for better guard, and the Gorgon on her shield, are both representative mainly of the chilling horror and sadness (turning men to stone, as it were), of the outmost and superficial spheres of knowledge — that knowledge which separates, in bitterness, hardness, and sorrow, the heart of the full-grown man from the heart of the child. For out of imperfect knowledge spring terror, dissension, danger, and disdain; but from perfect knowledge, given by the

full-revealed Athena, strength and peace, in sign of which she is crowned with the olive spray, and bears the resistless spear.

This, then, was the Greek conception of purest Deity, and every habit of life, and every form of his art developed themselves from the seeking this bright, serene, resistless wisdom; and setting himself, as a man, to do things evermore rightly and strongly;¹ not with any ardent affection or ultimate hope; but with a resolute and continent energy of will, as knowing that for failure there was no consolation, and for sin there was no remission. And the Greek architecture rose unerring, bright, clearly defined, and self-contained.

Next followed in Europe the great Christian faith, which was essentially the religion of Comfort. Its great doctrine is the remission of sins; for which cause it happens, too often, in certain phases of Christianity, that sin and sickness themselves are partly glorified, as if, the more you had to be healed of, the more divine was the healing. The practical result of this doctrine, in art, is a continual contemplation of sin and disease, and of imaginary states of purification from them; thus we have an architecture conceived in a mingled sentiment of melancholy and aspiration, partly severe, partly luxuriant, which will bend itself to every one of our needs, and every one of our fancies, and be strong or weak with us, as we are strong or weak ourselves. It is, of all architecture, the basest, when base people build it — of all, the noblest, when built by the noble.

¹ It is an error to suppose that the Greek worship, or seeking, was chiefly of Beauty. It was essentially of Rightness and Strength, founded on Forethought: the principal character of Greek art is not Beauty, but design: and the Dorian Apollo-worship and Athenian Virgin-worship are both expressions of adoration of divine Wisdom and Purity. Next to these great deities rank, in power over the national mind, Dionysus and Ceres, the givers of human strength and life: then, for heroic example, Hercules. There is no Venus-worship among the Greeks in the great times: and the Muses are essentially teachers of Truth, and of its harmonies. Compare *Aratra Pentelici*, § 200.

And now note that both these religions — Greek and Mediæval — perished by falsehood in their own main purpose. The Greek religion of Wisdom perished in a false philosophy — “Oppositions of science, falsely so called.” The Mediæval religion of Consolation perished in false comfort; in remission of sins given lyngly. It was the selling of absolution that ended the Mediæval faith; and I can tell you more, it is the selling of absolution which, to the end of time, will mark false Christianity. Pure Christianity gives her remission of sins only by *ending* them; but false Christianity gets her remission of sins by *compounding* for them. And there are many ways of compounding for them. We English have beautiful little quiet ways of buying absolution, whether in low Church or high, far more cunning than any of Tetzels trading.

Then, thirdly, there followed the religion of Pleasure, in which all Europe gave itself to luxury, ending in death. First, *bals masqués* in every saloon, and then guillotines in every square. And all these three worships issue in vast temple building. Your Greek worshipped Wisdom, and built you the Parthenon — the Virgin’s temple. The Mediæval worshipped Consolation, and built you Virgin temples also — but to our Lady of Salvation. Then the Revivalist worshipped beauty, of a sort, and built you Versailles, and the Vatican. Now, lastly, will you tell me what *we* worship, and what *we* build?

You know we are speaking always of the real, active, continual, national worship; that by which men act while they live; not that which they talk of when they die. Now, we have, indeed, a nominal religion, to which we pay tithes of property and sevenths of time; but we have also a practical and earnest religion, to which we devote nine-tenths of our property and six-sevenths of our time. And we dispute a great deal about the nominal religion; but we are all unanimous about this practical one, of which I think you will

admit that the ruling goddess may be best generally described as the "Goddess of Getting-on," or "Britannia of the Market." The Athenians had an "Athena Agoraia," or Athena of the Market; but she was a subordinate type of their goddess, while our Britannia Agoraia is the principal type of ours. And all your great architectural works, are, of course, built to her. It is long since you built a great cathedral; and how you would laugh at me, if I proposed building a cathedral on the top of one of these hills of yours, to make it an Acropolis! But your railroad mounds, vaster than the walls of Babylon; your railroad stations, vaster than the temple of Ephesus, and innumerable; your chimneys how much more mighty and costly than cathedral spires! your harbor piers; your warehouses; your exchanges! — all these are built to your great Goddess of "Getting-on"; and she has formed, and will continue to form, your architecture, as long as you worship her; and it is quite vain to ask me to tell you how to build to *her*; you know far better than I.

There might indeed, on some theories, be a conceivably good architecture for Exchanges — that is to say, if there were any heroism in the fact or deed of exchange, which might be typically carved on the outside of your building. For, you know, all beautiful architecture must be adorned with sculpture or painting; and for sculpture or painting, you must have a subject. And hitherto it has been a received opinion among the nations of the world that the only right subjects for either, were *heroisms* of some sort. Even on his pots and his flagons, the Greek put a Hercules slaying lions, or an Apollo slaying serpents, or Bacchus slaying melancholy giants, and earth-born despondencies. On his temples, the Greek put contests of great warriors in founding states, or of gods with evil spirits. On his houses and temples alike, the Christian put carvings of angels conquering devils; or of hero-martyrs exchanging this world for another; subject inappropriate, I think, to our direction of exchange here. And the

Master of Christians not only left his followers without any orders as to the sculpture of affairs of exchange on the outside of buildings, but gave some strong evidence of his dislike of affairs of exchange within them. And yet there might surely be a heroism in such affairs; and all commerce become a kind of selling of doves, not impious. The wonder has always been great to me, that heroism has never been supposed to be in any wise consistent with the practice of supplying people with food, or clothes; but rather with that of quartering one's self upon them for food, and stripping them of their clothes. Spoiling of armor is an heroic deed in all ages; but the selling of clothes, old or new, has never taken any color of magnanimity. Yet one does not see why feeding the hungry and clothing the naked should ever become base businesses, even when engaged in on a large scale. If one could contrive to attach the notion of conquest to them anyhow! so that, supposing there were anywhere an obstinate race, who refused to be comforted, one might take some pride in giving them compulsory comfort!¹ and as it were, "*occupying* a country" with one's gifts, instead of one's armies? If one could only consider it as much a victory to get a barren field sown, as to get an eared field stripped; and contend who should build villages, instead of who should "carry" them! Are not all forms of heroism, conceivable in doing these serviceable deeds? You doubt who is strongest? It might be ascertained by push of spade, as well as push of sword. Who is wisest? There are witty things to be thought of in planning other business than campaigns. Who is bravest? There are always the elements to fight with, stronger than men; and nearly as merciless.

The only absolutely and unapproachably heroic element in the soldier's work seems to be — that he is paid little for it — and regularly: while you traffickers, and exchangers, and others occupied in presumably benevolent business, like to

¹ Quite serious, all this, though it reads like jest.

be paid much for it — and by chance. I never can make out how it is that a *knight*-errant does not expect to be paid for his trouble, but a *pedler*-errant always does; — that people are willing to take hard knocks for nothing, but never to sell ribands cheap; — that they are ready to go on fervent crusades to recover the tomb of a buried God, but never on any travels to fulfil the orders of a living one; — that they will go anywhere barefoot to preach their faith, but must be well bribed to practise it, and are perfectly ready to give the Gospel gratis, but never the loaves and fishes.¹

If you chose to take the matter up on any such soldierly principle, to do your commerce, and your feeding of nations, for fixed salaries; and to be as particular about giving people the best food, and the best cloth, as soldiers are about giving them the best gunpowder, I could carve something for you on your exchange worth looking at. But I can only at present suggest decorating its frieze with pendent purses; and making its pillars broad at the base, for the sticking of bills. And in the innermost chambers of it there might be a statue of Britannia of the Market, who may have, perhaps advisably, a partridge for her crest, typical at once of her courage in fighting for noble ideas, and of her interest in game; and round its neck the inscription in golden letters, “*Perdix fovit quæ non peperit.*”² Then, for her spear, she might have a weaver’s beam; and on her shield, instead of St. George’s Cross, the Milanese boar, semi-fleeced, with the town of Gennesaret proper, in the field, and the legend “In the best market,”³ and her corselet, of leather, folded over her heart

¹ Please think over this paragraph, too briefly and antithetically put, but one of those which I am happiest in having written.

² *Jerem.* xvii. 11 (best in Septuagint and Vulgate). “As the partridge, fostering what she brought not forth, so he that getteth riches, not by right shall leave them in the midst of his days, and at his end shall be a fool.”

³ Meaning fully, “We have brought our pigs to it.”

in the shape of a purse, with thirty slits in it for a piece of money to go in at, on each day of the month. And I doubt not but that people would come to see your exchange, and its goddess, with applause.

Nevertheless, I want to point out to you certain strange characters in this goddess of yours. She differs from the great Greek and Mediæval deities essentially in two things — first, as to the continuance of her presumed power; secondly, as to the extent of it.

1st, as to the Continuance.

The Greek Goddess of Wisdom gave continual increase of wisdom, as the Christian Spirit of Comfort (or Comforter) continual increase of comfort. There was no question, with these, of any limit or cessation of function. But with your Agora Goddess, that is just the most important question. Getting on — but where to? Gathering together — but how much? Do you mean to gather always — never to spend? If so, I wish you joy of your goddess, for I am just as well off as you, without the trouble of worshipping her at all. But if you do not spend, somebody else will — somebody else must. And it is because of this (among many other such errors) that I have fearlessly declared your so-called science of Political Economy to be no science; because, namely, it has omitted the study of exactly the most important branch of the business — the study of *spending*. For spend you must, and as much as you make, ultimately. You gather corn: — will you bury England under a heap of grain; or will you, when you have gathered, finally eat? You gather gold: — will you make your house-roofs of it, or pave your streets with it? That is still one way of spending it. But if you keep it, that you may get more, I'll give you more; I'll give you all the gold you want — all you can imagine — if you can tell me what you'll do with it. You shall have thousands of gold pieces; — thousands of thousands — millions — mountains, of gold: where will you keep

them? Will you put an Olympus of silver upon a golden Pelion — make Ossa like a wart? Do you think the rain and dew would then come down to you, in the streams from such mountains, more blessedly than they will down the mountains which God has made for you, of moss and whinstone? But it is not gold that you want to gather! What is it? greenbacks? No; not those neither. What is it then — is it ciphers after a capital I? Cannot you practise writing ciphers, and write as many as you want? Write ciphers for an hour every morning, in a big book, and say every evening, I am worth all those noughts more than I was yesterday. Won't that do? Well, what in the name of Plutus is it you want? Not gold, not greenbacks, not ciphers after a capital I? You will have to answer, after all, "No; we want, somehow or other, money's *worth*." Well, what is that? Let your Goddess of Getting-on discover it, and let her learn to stay therein.

II. But there is yet another question to be asked respecting this Goddess of Getting-on. The first was of the continuance of her power; the second is of its extent.

Pallas and the Madonna were supposed to be all the world's Pallas, and all the world's Madonna. They could teach all men, and they could comfort all men. But, look strictly into the nature of the power of your Goddess of Getting-on; and you will find she is the Goddess — not of everybody's getting on — but only of somebody's getting on. This is a vital, or rather deathful, distinction. Examine it in your own ideal of the state of national life which this Goddess is to evoke and maintain. I asked you what it was, when I was last here;¹ — you have never told me. Now, shall I try to tell you?

Your ideal of human life then is, I think, that it should be passed in a pleasant undulating world, with iron and coal

¹ *The Two Paths*, p. 115 (small edition), and p. 99 of vol. x. of the Revised Series of the Entire Works.

everywhere underneath it. On each pleasant bank of this world is to be a beautiful mansion, with two wings; and stables, and coach-houses; a moderately sized park; a large garden and hot-houses; and pleasant carriage drives through the shrubberies. In this mansion are to live the favored votaries of the Goddess; the English gentleman, with his gracious wife, and his beautiful family; always able to have the boudoir and the jewels for the wife, and the beautiful ball dresses for the daughters, and hunters for the sons, and a shooting in the Highlands for himself. At the bottom of the bank, is to be the mill; not less than a quarter of a mile long, with a steam engine at each end, and two in the middle, and a chimney three hundred feet high. In this mill are to be in constant employment from eight hundred to a thousand workers, who never drink, never strike, always go to church on Sunday, and always express themselves in respectful language.

Is not that, broadly, and in the main features, the kind of thing you propose to yourselves? It is very pretty indeed, seen from above; not at all so pretty, seen from below. For, observe, while to one family this deity is indeed the Goddess of Getting-on, to a thousand families she is the Goddess of *not* Getting-on. "Nay," you say, "they have all their chance." Yes, so has every one in a lottery, but there must always be the same number of blanks. "Ah! but in a lottery it is not skill and intelligence which take the lead, but blind chance." What then! do you think the old practice, that "they should take who have the power, and they should keep who can," is less iniquitous, when the power has become power of brains instead of fist? and that, though we may not take advantage of a child's or a woman's weakness, we may of a man's foolishness? "Nay, but finally, work must be done, and some one must be at the top, some one at the bottom." Granted, my friends. Work must always be, and captains of work must always be; and if you in the least

remember the tone of any of my writings, you must know that they are thought unfit for this age, because they are always insisting on need of government, and speaking with scorn of liberty. But I beg you to observe that there is a wide difference between being captains or governors of work, and taking the profits of it. It does not follow, because you are general of an army, that you are to take all the treasure, or land, it wins (if it fight for treasure or land); neither, because you are king of a nation, that you are to consume all the profits of the nation's work. Real kings, on the contrary, are known invariably by their doing quite the reverse of this, — by their taking the least possible quantity of the nation's work for themselves. There is no test of real kingship so infallible as that. Does the crowned creature live simply, bravely, unostentatiously? probably he *is* a King. Does he cover his body with jewels, and his table with delicates? in all probability he is *not* a King. It is possible he may be, as Solomon was; but that is when the nation shares his splendor with him. Solomon made gold, not only to be in his own palace as stones, but to be in Jerusalem as stones. But even so, for the most part, these splendid kingdoms expire in ruin, and only the true kingdoms live, which are of royal laborers governing loyal laborers; who, both leading rough lives, establish the true dynasties. Conclusively you will find that because you are king of a nation, it does not follow that you are to gather for yourself all the wealth of that nation; neither, because you are king of a small part of the nation, and lord over the means of its maintenance — over field, or mill, or mine — are you to take all the produce of that piece of the foundation of national existence for yourself.

You will tell me I need not preach against these things, for I cannot mend them. No, good friends, I cannot; but you can, and you will; or something else can and will. Even good things have no abiding power — and shall these evil things persist in victorious evil? All history shows, on the

contrary, that to be the exact thing they never can do. Change *must* come; but it is ours to determine whether change of growth, or change of death. Shall the Parthenon be in ruins on its rock, and Bolton Priory in its meadow, but these mills of yours be the consummation of the buildings of the earth, and their wheels be as the wheels of eternity? Think you that "men may come, and men may go," but — mills — go on forever? Not so; out of these, better or worse shall come; and it is for you to choose which.

I know that none of this wrong is done with deliberate purpose. I know, on the contrary, that you wish your workmen well; that you do much for them, and that you desire to do more for them, if you saw your way to such benevolence safely. I know that even all this wrong and misery are brought about by a warped sense of duty, each of you striving to do his best; but unhappily, not knowing for whom this best should be done. And all our hearts have been betrayed by the plausible impiety of the modern economist, that "To do the best for yourself, is finally to do the best for others." Friends, our great Master said not so; and most absolutely we shall find this world is not made so. Indeed, to do the best for others, is finally to do the best for ourselves; but it will not do to have our eyes fixed on that issue. The Pagans had got beyond that. Hear what a Pagan says of this matter; hear what were, perhaps, the last written words of Plato, — if not the last actually written (for this we cannot know), yet assuredly in fact and power his parting words — in which, endeavoring to give full crowning and harmonious close to all his thoughts, and to speak the sum of them by the imagined sentence of the Great Spirit, his strength and his heart fail him, and the words cease, broken off forever.

They are at the close of the dialogue called "Critias," in which he describes, partly from real tradition, partly in ideal dream, the early state of Athens; and the genesis, and order, and religion of the fabled isle of Atlantis; in which genesis

he conceives the same first perfection and final degeneracy of man, which in our own Scriptural tradition is expressed by saying that the Sons of God intermarried with the daughters of men, for he supposes the earliest race to have been indeed the children of God; and to have corrupted themselves, until "their spot was not the spot of his children." And this, he says, was the end; that indeed "through many generations, so long as the God's nature in them yet was full, they were submissive to the sacred laws, and carried themselves lovingly to all that had kindred with them in divineness; for their uttermost spirit was faithful and true, and in every wise great; so that, in *all meekness of wisdom, they dealt with each other*, and took all the chances of life; and despising all things except virtue, they cared little what happened day by day, and *bore lightly the burden* of gold and of possessions; for they saw that, if *only their common love and virtue increased, all these things would be increased together with them*; but to set their esteem and ardent pursuit upon material possession would be to lose that first, and their virtue and affection together with it. And by such reasoning, and what of the divine nature remained in them, they gained all this greatness of which we have already told; but when the God's part of them faded and became extinct, being mixed again and again, and effaced by the prevalent mortality; and the human nature at last exceeded, they then became unable to endure the courses of fortune; and fell into shapelessness of life, and baseness in the sight of him who could see, having lost everything that was fairest of their honor; while to the blind hearts which could not discern the true life, tending to happiness, it seemed that they were then chiefly noble and happy, being filled with all iniquity of inordinate possession and power. Whereupon, the God of gods, whose Kingdom is in laws, beholding a once just nation thus cast into misery, and desiring to lay such punishment upon them as might make them repent into restraining, gathered together all the

gods into his dwelling-place, which from heaven's centre overlooks whatever has part in creation; and having assembled them, he said" —

The rest is silence. Last words of the chief wisdom of the heathen, spoken of this idol of riches; this idol of yours; this golden image high by measureless cubits, set up where your green fields of England are furnace-burnt into the likeness of the plain of Dura: this idol, forbidden to us, first of all idols, by our own Master and faith; forbidden to us also by every human lip that has ever, in any age or people, been accounted of as able to speak according to the purposes of God. Continue to make that forbidden deity your principal one, and soon no more art, no more science, no more pleasure will be possible. Catastrophe will come; or worse than catastrophe, slow mouldering and withering into Hades. But if you can fix some conception of a true human state of life to be striven for — life good for all men as for yourselves — if you can determine some honest and simple order of existence; following those trodden ways of wisdom, which are pleasantness, and seeking her quiet and withdrawn paths, which are peace¹; — then, and so sanctifying wealth into "commonwealth," all your art, your literature, your daily labors, your domestic affection, and citizen's duty, will join and increase into one magnificent harmony. You will know then how to build, well enough; you will build with stone well, but with flesh better; temples not made with hands, but riveted of hearts; and that kind of marble, crimson-veined, is indeed eternal.

¹ I imagine the Hebrew chant merely intends passionate repetition, and not a distinction of this somewhat fanciful kind; yet we may profitably make it in reading the English.

THE AMERICAN SCHOLAR ¹

RALPH WALDO EMERSON

I GREET you on the recommencement of our literary year. Our anniversary is one of hope, and, perhaps, not enough of labor. We do not meet for games of strength or skill, for the recitation of histories, tragedies and odes, like the ancient Greeks; for parliaments of love and poesy, like the Troubadours; nor for the advancement of science, like our contemporaries in the British and European capitals. Thus far, our holiday has been simply a friendly sign of the survival of the love of letters amongst a people too busy to give to letters any more. As such, it is precious as the sign of an indestructible instinct. Perhaps the time is already come, when it ought to be, and will be, something else; when the sluggard intellect of this continent will look from under its iron lids, and fill the postponed expectation of the world with something better than the exertions of mechanical skill. Our day of dependence, our long apprenticeship to the learning of other lands, draws to a close. The millions, that around us are rushing into life, cannot always be fed on the sere remains of foreign harvests. Events, actions arise, that must be sung, that will sing themselves. Who can doubt that poetry will revive and lead in a new age, as the star in the constellation Harp, which now flames in our zenith, astronomers announce, shall one day be the pole-star for a thousand years?

In this hope I accept the topic which not only usage, but the nature of our association, seem to prescribe to this day, —

¹ An oration delivered before the Phi Beta Kappa Society, at Cambridge, August 31, 1837.

the AMERICAN SCHOLAR. Year by year we come up hither to read one more chapter of his biography. Let us inquire what light new days and events have thrown on his character and his hopes.

It is one of those fables which, out of an unknown antiquity, convey an unlooked-for wisdom, that the gods, in the beginning, divided Man into men, that he might be more helpful to himself; just as the hand was divided into fingers, the better to answer its end.

The old fable covers a doctrine ever new and sublime; that there is One Man, — present to all particular men only partially, or through one faculty; and that you must take the whole society to find the whole man. Man is not a farmer, or a professor, or an engineer, but he is all. Man is priest, and scholar, and statesman, and producer, and soldier. In the *divided* or social state these functions are parceled out to individuals, each of whom aims to do his stint of the joint work, whilst each other performs his. The fable implies that the individual, to possess himself, must sometimes return from his own labor to embrace all the other laborers. But, unfortunately, this original unit, this fountain of power, has been so distributed to multitudes, has been so minutely subdivided and peddled out, that it is spilled into drops and cannot be gathered. The state of society is one in which the members have suffered amputation from the trunk, and strut about so many walking monsters — a good finger, a neck, a stomach, an elbow, but never a man.

Man is thus metamorphosed into a thing, into many things. The planter, who is Man sent out into the field to gather food, is seldom cheered by any idea of the true dignity of his ministry. He sees his bushel and his cart, and nothing beyond, and sinks into the farmer, instead of Man on the farm. The tradesman scarcely ever gives an ideal worth to his work, but is ridden by the routine of his craft, and the soul is subject to dollars. The priest becomes a form;

the attorney, a statute-book; the mechanic, a machine; the sailor, a rope of a ship.

In this distribution of functions the scholar is the delegated intellect. In the right state, he is *Man Thinking*. In the degenerate state, when the victim of society, he tends to become a mere thinker, or, still worse, the parrot of other men's thinking.

In this view of him, as Man Thinking, the theory of his office is contained. Him Nature solicits with all her placid, all her monitory pictures; him the past instructs; him the future invites. Is not, indeed, every man a student, and do not all things exist for the student's behoof? And, finally, is not the true scholar the only true master? But the old oracle said, "All things have two handles: beware of the wrong one." In life, too often the scholar errs with mankind and forfeits his privilege. Let us see him in his school, and consider him in reference to the main influences he receives.

I. The first in time and the first in importance of the influences upon the mind is that of Nature. Every day, the sun; and, after sunset, Night and her stars. Ever the winds blow; ever the grass grows. Every day, men and women, conversing, beholding and beholden. The scholar is he of all men whom this spectacle most engages. He must settle its value in his mind. What is Nature to him? There is never a beginning, there is never an end, to the inexplicable continuity of this web of God, but always circular power returning into itself. Therein it resembles his own spirit, whose beginning, whose ending, he never can find, — so entire, so boundless. Far, too, as her splendors shine, system on system shooting like rays, upward, downward, without centre, without circumference, — in the mass and in the particle, Nature hastens to render account of herself to the mind. Classification begins. To the young mind, everything is individual, stands by itself. By and by it finds how to

join two things, and see in them one nature; then three, then three thousand; and so tyrannized over by its own unifying instinct, it goes on tying things together, diminishing anomalies, discovering roots running under ground, whereby contrary and remote things cohere, and flower out from one stem. It presently learns that since the dawn of history there has been a constant accumulation and classifying of facts. But what is classification but the perceiving that these objects are not chaotic, and are not foreign, but have a law which is also a law of the human mind? The astronomer discovers that geometry, a pure abstraction of the human mind, is the measure of planetary motion. The chemist finds proportions and intelligible method throughout matter; and science is nothing but the finding of analogy, identity, in the most remote parts. The ambitious soul sits down before each refractory fact; one after another reduces all strange constitutions, all new powers, to their class and their law, and goes on forever to animate the last fiber of organization, the outskirts of nature, by insight.

Thus to him, to this school-boy under the bending dome of day, is suggested that he and it proceed from one root; one is leaf and one is flower; relation, sympathy, stirring in every vein. And what is that Root? Is not that the soul of his soul? A thought too bold, a dream too wild. Yet when this spiritual light shall have revealed the law of more earthly natures, when he has learned to worship the soul, and to see that the natural philosophy that now is, is only the first gropings of its gigantic hand, he shall look forward to an ever-expanding knowledge as to a becoming creator. He shall see that Nature is the opposite of the soul, answering to it part for part. One is seal and one is print. Its beauty is the beauty of his own mind. Its laws are the laws of his own mind. Nature then becomes to him the measure of his attainments. So much of Nature as he is ignorant of, so much of his own mind does he not yet possess. And, in fine, the

ancient precept, "Know thyself," and the modern precept, "Study Nature," become at last one maxim.

II. The next great influence into the spirit of the scholar is the mind of the Past — in whatever form, whether of literature, of art, of institutions, that mind is inscribed. Books are the best type of the influence of the past, and perhaps we shall get at the truth — learn the amount of this influence more conveniently — by considering their value alone.

The theory of books is noble. The scholar of the first age received into him the world around; brooded thereon; gave it the new arrangement of his own mind, and uttered it again. It came into him life; it went out from him truth. It came to him short-lived actions; it went out from him immortal thoughts. It came to him business; it went from him poetry. It was dead fact; now it is quick thought. It can stand and it can go. It now endures, it now flies, it now aspires. Precisely in proportion to the depth of mind from which it issued, so high does it soar, so long does it sing.

Or, I might say, it depends on how far the process had gone of transmuting life into truth. In proportion to the completeness of the distillation, so will the purity and imperishableness of the product be. But none is quite perfect. As no air-pump can by any means make a perfect vacuum, so neither can any artist entirely exclude the conventional, the local, the perishable from his book, or write a book of pure thought that shall be as efficient in all respects to a remote posterity, as to contemporaries, or rather to the second age. Each age, it is found, must write its own books; or rather, each generation for the next succeeding. The books of an older period will not fit this.

Yet hence arises a grave mischief. The sacredness which attaches to the act of creation — the act of thought — is transferred to the record. The poet chanting was felt to be

a divine man: henceforth the chant is divine also. The writer was a just and wise spirit: henceforward it is settled, the book is perfect; as love of the hero corrupts into worship of his statue. Instantly the book becomes noxious; the guide is a tyrant. The sluggish and perverted mind of the multitude, slow to open to the incursions of Reason, having once so opened, having once received this book, stands upon it and makes an outcry if it is disparaged. Colleges are built on it. Books are written on it by thinkers, not by Man Thinking; by men of talent, that is, who start wrong, who set out from accepted dogmas, not from their own sight of principles. Meek young men grow up in libraries believing it their duty to accept the views which Cicero, which Locke, which Bacon have given, forgetful that Cicero, Locke, and Bacon were only young men in libraries when they wrote these books.

Hence, instead of Man Thinking we have the bookworm. Hence, the book-learned class who value books as such; not as related to Nature and the human constitution, but as making a sort of Third Estate with the world and the soul. Hence, the restorers of readings, the emendators, the bibliomaniacs of all degrees.

Books are the best of things, well used; abused, among the worst. What is the right use? What is the one end, which all means go to effect? They are for nothing but to inspire. I had better never see a book, than to be warped by its attraction clean out of my own orbit, and made a satellite instead of a system. The one thing in the world, of value, is the active soul. This every man is entitled to; this every man contains within him, although, in almost all men, obstructed and as yet unborn. The soul active sees absolute truth; and utters truth, or creates. In this action it is genius; not the privilege of here and there a favorite, but the sound estate of every man. In its essence it is progressive. The book, the college, the school of art, the institution of any kind, stop with some past utterance of genius. This is good, say they, — let us

hold by this. They pin me down. They look backward and not forward. But genius looks forward; the eyes of man are set in his forehead, not in his hindhead; man hopes; genius creates. Whatever talents may be, if the man create not, the pure efflux of the Deity is not his; cinders and smoke there may be, but not yet flame. There are creative manners, there are creative actions, and creative words; manners, actions, words, that is, indicative of no custom or authority, but springing spontaneous from the mind's own sense of good and fair.

On the other part, instead of being its own seer, let it receive from another mind its truth, though it were in torrents of light, without periods of solitude, inquest, and self-recovery, and a fatal disservice is done. Genius is always sufficiently the enemy of genius by over-influence. The literature of every nation bears me witness. The English dramatic poets have Shakspearized now for two hundred years.

Undoubtedly there is a right way of reading, so it be sternly subordinated. Man Thinking must not be subdued by his instruments. Books are for the scholar's idle times. When he can read God directly, the hour is too precious to be wasted in other men's transcripts of their readings. But when the intervals of darkness come, as come they must, — when the sun is hid, and the stars withdraw their shining, — we repair to the lamps which were kindled by their ray, to guide our steps to the East again, where the dawn is. We hear, that we may speak. The Arabian proverb says, "A fig-tree, looking on a fig-tree, becometh fruitful."

It is remarkable, the character of the pleasure we derive from the best books. They impress us with the conviction that one nature wrote and the same reads. We read the verses of one of the great English poets, of Chaucer, of Marvell, of Dryden, with the most modern joy, — with a pleasure, I mean, which is in great part caused by the abstraction of all *time* from their verses. There is some awe mixed with

the joy of our surprise when this poet, who lived in some past world two or three hundred years ago, says that which lies close to my own soul, that which I also had wellnigh thought and said. But for the evidence thence afforded to the philosophical doctrine of the identity of all minds, we should suppose some preëstablished harmony, some foresight of souls that were to be, and some preparation of stores for their future wants, like the fact observed in insects, who lay up food before death for the young grub they shall never see.

I would not be hurried by any love of system, by any exaggeration of instincts, to underrate the Book. We all know that as the human body can be nourished on any food, though it were boiled grass and the broth of shoes, so the human mind can be fed by any knowledge. And great and heroic men have existed who had almost no other information than by the printed page. I only would say, that it needs a strong head to bear that diet. One must be an inventor to read well. As the proverb says, "He that would bring home the wealth of the Indies, must carry out the wealth of the Indies." There is then creative reading as well as creative writing. When the mind is braced by labor and invention, the page of whatever book we read becomes luminous with manifold allusion. Every sentence is doubly significant, and the sense of our author is as broad as the world. We then see, what is always true, that, as the seer's hour of vision is short and rare among heavy days and months, so is its record, perchance, the least part of his volume. The discerning will read, in his Plato or Shakspeare, only that least part, — only the authentic utterances of the oracle; all the rest he rejects, were it never so many times Plato's and Shakspeare's.

Of course, there is a portion of reading quite indispensable to a wise man. History and exact science he must learn by laborious reading. Colleges, in like manner, have their indispensable office, — to teach elements. But they can only highly serve us when they aim not to drill, but to create;

when they gather from far every ray of various genius to their hospitable halls, and, by the concentrated fires, set the hearts of their youth on flame. Thought and knowledge are natures in which apparatus and pretension avail nothing. Gowns, and pecuniary foundations, though of towns of gold, can never countervail the least sentence or syllable of wit. Forget this, and our American colleges will recede in their public importance, whilst they grow richer every year.

III. There goes in the world a notion that the scholar should be a recluse, a valetudinarian, — as unfit for any handiwork or public labor, as a pen-knife for an axe. The so-called “practical men” sneer at speculative men, as if, because they speculate or *see*, they could do nothing. I have heard it said that the clergy — who are always, more universally than any other class, the scholars of their day — are addressed as women; that the rough, spontaneous conversation of men they do not hear, but only a mincing and diluted speech. They are often virtually disfranchised; and, indeed, there are advocates for their celibacy. As far as this is true of the studious classes, it is not just and wise. Action is with the scholar subordinate, but it is essential. Without it, he is not yet man. Without it, thought can never ripen into truth. Whilst the world hangs before the eye as a cloud of beauty, we cannot even see its beauty. Inaction is cowardice, but there can be no scholar without the heroic mind. The preamble of thought, the transition through which it passes from the unconscious to the conscious, is action. Only so much do I know, as I have lived. Instantly we know whose words are loaded with life, and whose not.

The world — this shadow of the soul, or *other me* — lies wide around. Its attractions are the keys which unlock my thoughts and make me acquainted with myself. I run eagerly into this resounding tumult. I grasp the hands of those next me, and take my place in the ring to suffer and to

work, taught by an instinct, that so shall the dumb abyss be vocal with speech. I pierce its order; I dissipate its fear; I dispose of it within the circuit of my expanding life. So much only of life as I know by experience, so much of the wilderness have I vanquished and planted, or so far have I extended my being, my dominion. I do not see how any man can afford, for the sake of his nerves and his nap, to spare any action in which he can partake. It is pearls and rubies to his discourse. Drudgery, calamity, exasperation, want, are instructors in eloquence and wisdom. The true scholar grudges every opportunity of action passed by, as a loss of power.

It is the raw material out of which the intellect molds her splendid products. A strange process too, this, by which experience is converted into thought, as a mulberry leaf is converted into satin. The manufacture goes forward at all hours.

The actions and events of our childhood and youth are now matters of calmest observation. They lie like fair pictures in the air. Not so with our recent actions, — with the business which we now have in hand. On this we are quite unable to speculate. Our affections as yet circulate through it. We no more feel or know it, than we feel the feet, or the hand, or the brain of our body. The new deed is yet a part of life, — remains for a time immersed in our unconscious life. In some contemplative hour it detaches itself from the life like a ripe fruit, to become a thought of the mind. Instantly it is raised, transfigured; the corruptible has put on incorruption. Henceforth it is an object of beauty, however base its origin and neighborhood. Observe, too, the impossibility of antedating this act. In its grub state, it cannot fly, it cannot shine, it is a dull grub. But suddenly, without observation, the selfsame thing unfurls beautiful wings, and is an angel of wisdom. So is there no fact, no event, in our private history which shall not, sooner or later, lose its adhesive, inert form,

and astonish us by soaring from our body into the empyrean. Cradle and infancy, school and playground, the fear of boys, and dogs, and ferules, the love of little maids and berries, and many another fact that once filled the whole sky, are gone already; friend and relative, profession and party, town and country, nation and world, must also soar and sing.

Of course, he who has put forth his total strength in fit actions has the richest return of wisdom. I will not shut myself out of this globe of action, and transplant an oak into a flower-pot, there to hunger and pine; nor trust the revenue of some single faculty, and exhaust one vein of thought, much like those Savoyards, who, getting their livelihood by carving shepherds, shepherdesses, and smoking Dutchmen for all Europe, went out one day to the mountain to find stock, and discovered that they had whittled up the last of their pine-trees. Authors we have in numbers who have written out their vein, and who, moved by a commendable prudence, sail for Greece or Palestine, follow the trapper into the prairie, or ramble round Algiers, to replenish their merchantable stock.

If it were only for a vocabulary, the scholar would be covetous of action. Life is our dictionary. Years are well spent in country labors; in town, in the insight into trades and manufactures; in frank intercourse with many men and women; in science; in art, — to the one end of mastering in all their facts a language by which to illustrate and embody our perceptions. I learn immediately from any speaker how much he has already lived, through the poverty or the splendor of his speech. Life lies behind us as the quarry from whence we get tiles and cope-stones for the masonry of to-day. This is the way to learn grammar. Colleges and books only copy the language which the field and the work-yard made.

But the final value of action, like that of books, and better than books, is, that it is a resource. That great principle of Undulation in nature, that shows itself in the inspiring and

expiring of the breath; in desire and satiety; in the ebb and flow of the sea; in day and night; in heat and cold; and as yet more deeply ingrained in every atom and every fluid, is known to us under the name of Polarity, — these “fits of easy transmission and reflection,” as Newton called them, are the law of Nature because they are the law of spirit.

The mind now thinks, now acts; and each fit reproduces the other. When the artist has exhausted his materials, when the fancy no longer paints, when thoughts are no longer apprehended, and books are a weariness, — he has always the resource *to live*. Character is higher than intellect. Thinking is the function. Living is the functionary. The stream retreats to its source. A great soul will be strong to live, as well as strong to think. Does he lack organ or medium to impart his truths? He can still fall back on this elemental force of living them. This is a total act. Thinking is a partial act. Let the grandeur of justice shine in his affairs. Let the beauty of affection cheer his lowly roof. Those “far from fame,” who dwell and act with him, will feel the force of his constitution in the doings and passages of the day better than it can be measured by any public and designed display. Time shall teach him that the scholar loses no hour which the man lives. Herein he unfolds the sacred germ of his instinct, screened from influence. What is lost in seemliness is gained in strength. Not out of those, on whom systems of education have exhausted their culture, comes the helpful giant to destroy the old or to build the new, but out of unhand-selled savage nature, out of terrible Druids and berserkirs, come at last Alfred and Shakspeare.

I hear, therefore, with joy whatever is beginning to be said of the dignity and necessity of labor to every citizen. There is virtue yet in the hoe and the spade, for learned as well as for unlearned hands. And labor is everywhere welcome; always we are invited to work; only be this limitation observed, that a man shall not for the sake of wider activity

sacrifice any opinion to the popular judgments and modes of action.

I have now spoken of the education of the scholar by Nature, by books, and by action. It remains to say somewhat of his duties.

They are such as become Man Thinking. They may all be comprised in self-trust. The office of the scholar is to cheer, to raise, and to guide men by showing them facts amidst appearances. He plies the slow, unhonored, and unpaid task of observation. Flamsteed and Herschel, in their glazed observatories, may catalogue the stars with the praise of all men, and, the results being splendid and useful, honor is sure. But he, in his private observatory, cataloguing obscure and nebulous stars of the human mind, which as yet no man has thought of as such, — watching days and months, sometimes, for a few facts; correcting still his old records, — must relinquish display and immediate fame. In the long period of his preparation he must betray often an ignorance and shiftlessness in popular arts, incurring the disdain of the able, who shoulder him aside. Long he must stammer in his speech; often forego the living for the dead. Worse yet, he must accept — how often! — poverty and solitude. For the ease and pleasure of treading the old road, accepting the fashions, the education, the religion of society, he takes the cross of making his own, and, of course, the self-accusation, the faint heart, the frequent uncertainty and loss of time, which are the nettles and tangling vines in the way of the self-relying and self-directed; and the state of virtual hostility in which he seems to stand to society, and especially to educated society. For all this loss and scorn, what off-set? He is to find consolation in exercising the highest functions of human nature. He is one who raises himself from private considerations, and breathes and lives on public and illustrious thoughts. He is the world's eye. He is the world's heart. He is to resist

the vulgar prosperity that retrogrades ever to barbarism, by preserving and communicating heroic sentiments, noble biographies, melodious verse, and the conclusions of history. Whatsoever oracles the human heart, in all emergencies, in all solemn hours, has uttered as its commentary on the world of actions, — these he shall receive and impart. And whatsoever new verdict Reason from her inviolable seat pronounces on the passing men and events of to-day, — this he shall hear and promulgate.

These being his functions, it becomes him to feel all confidence in himself, and to defer never to the popular cry. He and he only knows the world. The world of any moment is the merest appearance. Some great decorum, some fetish of a government, some ephemeral trade, or war, or man, is cried up by half mankind and cried down by the other half, as if all depended on this particular up or down. The odds are that the whole question is not worth the poorest thought which the scholar has lost in listening to the controversy. Let him not quit his belief that a popgun is a popgun, though the ancient and honorable of the earth affirm it to be the crack of doom. In silence, in steadiness, in severe abstraction, let him hold by himself; add observation to observation, patient of neglect, patient of reproach; and bide his own time, — happy enough if he can satisfy himself alone, that this day he has seen something truly. Success treads on every right step. For the instinct is sure that prompts him to tell his brother what he thinks. He then learns that in going down into the secrets of his own mind he has descended into the secrets of all minds. He learns that he who has mastered any law in his private thoughts is master to that extent of all men whose language he speaks, and of all into whose language his own can be translated. The poet, in utter solitude remembering his spontaneous thoughts and recording them, is found to have recorded that which men in crowded cities find true for them also.

The orator distrusts at first the fitness of his frank confessions, — his want of knowledge of the persons he addresses, — until he finds that he is the complement of his hearers; that they drink his words because he fulfils for them their own nature; the deeper he dives into his privatest, secretest presentiment, to his wonder he finds this is the most acceptable, most public, and universally true. The people delight in it; the better part of every man feels, This is my music; this is myself.

In self-trust all the virtues are comprehended. Free should the scholar be, — free and brave. Free even to the definition of freedom, “without any hindrance that does not arise out of his own constitution.” Brave; for fear is a thing which a scholar by his very function puts behind him. Fear always springs from ignorance. It is a shame to him if his tranquillity, amid dangerous times, arise from the presumption that, like children and women, his is a protected class; or if he seek a temporary peace by the diversion of his thoughts from politics or vexed questions, hiding his head like an ostrich in the flowering bushes, peeping into microscopes, and turning rhymes, as a boy whistles to keep his courage up. So is the danger a danger still; so is the fear worse. Manlike let him turn and face it. Let him look into its eye and search its nature, inspect its origin, — see the whelping of this lion, which lies no great way back; he will then find in himself a perfect comprehension of its nature and extent; he will have made his hands meet on the other side, and can henceforth defy it, and pass on superior. The world is his, who can see through its pretension. What deafness, what stone-blind custom, what overgrown error you behold, is there only by sufferance, — by your sufferance. See it to be a lie, and you have already dealt it its mortal blow.

Yes, we are the cowed — we the trustless. It is a mischievous notion that we are come late into Nature; that the world was finished a long time ago. As the world was plastic

and fluid in the hands of God, so it is ever to so much of his attributes as we bring to it. To ignorance and sin, it is flint. They adapt themselves to it as they may; but in proportion as a man has anything in him divine, the firmament flows before him and takes his signet and form. Not he is great who can alter matter, but he who can alter my state of mind. They are the kings of the world who give the color of their present thought to all nature and all art, and persuade men by the cheerful serenity of their carrying the matter, that this thing which they do is the apple which the ages have desired to pluck, now at last ripe, and inviting nations to the harvest. The great man makes the great thing. Wherever Macdonald sits, there is the head of the table. Linnæus makes botany the most alluring of studies, and wins it from the farmer and the herb-woman; Davy, chemistry; and Cuvier, fossils. The day is always his, who works in it with serenity and great aims. The unstable estimates of men crowd to him whose mind is filled with a truth, as the heaped waves of the Atlantic follow the moon.

For this self-trust, the reason is deeper than can be fathomed, darker than can be enlightened. I might not carry with me the feeling of my audience in stating my own belief. But I have already shown the ground of my hope, in adverting to the doctrine that man is one. I believe man has been wronged; he has wronged himself. He has almost lost the light that can lead him back to his prerogatives. Men are become of no account. Men in history, men in the world of to-day are bugs, are spawn, and are called "the mass" and "the herd." In a century, in a millennium, one or two men; that is to say, one or two approximations to the right state of every man. All the rest behold in the hero or the poet their own green and crude being, — ripened; yes, and are content to be less, so *that* may attain to its full stature. What a testimony, full of grandeur, full of pity, is borne to the demands of his own nature by the poor clansman, the poor partisan, who rejoices

in the glory of his chief. The poor and the low find some amends to their immense moral capacity for their acquiescence in a political and social inferiority. They are content to be brushed like flies from the path of a great person, so that justice shall be done by him to that common nature which it is the dearest desire of all to see enlarged and glorified. They sun themselves in the great man's light, and feel it to be their own element. They cast the dignity of man from their downtrodden selves upon the shoulders of a hero, and will perish to add one drop of blood to make that great heart beat, those giant sinews combat and conquer. He lives for us, and we live in him.

Men such as they are, very naturally seek money or power; and power because it is as good as money, — the "spoils," so called, "of office." And why not? for they aspire to the highest, and this, in their sleep-walking, they dream is highest. Wake them, and they shall quit the false good, and leap to the true, and leave governments to clerks and desks. This revolution is to be wrought by the gradual domestication of the idea of Culture. The main enterprise of the world for splendor, for extent, is the upbuilding of a man. Here are the materials strewn along the ground. The private life of one man shall be a more illustrious monarchy, — more formidable to its enemy, more sweet and serene in its influence to its friend, than any kingdom in history. For a man, rightly viewed, comprehendeth the particular natures of all men. Each philosopher, each bard, each actor, has only done for me, as by a delegate, what one day I can do for myself. The books which once we valued more than the apple of the eye, we have quite exhausted. What is that but saying that we have come up with the point of view which the universal mind took through the eyes of one scribe; we have been that man, and have passed on. First one, then another, we drain all cisterns, and, waxing greater by all these supplies, we crave a better and more abundant food. The man has

never lived that can feed us ever. The human mind cannot be enshrined in a person who shall set a barrier on any one side to this unbounded, unboundable empire. It is one central fire, which, flaming now out of the lips of Etna, lightens the capes of Sicily; and now out of the throat of Vesuvius, illuminates the towers and vineyards of Naples. It is one light which beams out of a thousand stars. It is one soul which animates all men.

But I have dwelt perhaps tediously upon this abstraction of the Scholar. I ought not to delay longer to add what I have to say of nearer reference to the time and to this country.

Historically there is thought to be a difference in the ideas which predominate over successive epochs, and there are data for marking the genius of the Classic, of the Romantic, and now of the Reflective or Philosophical age. With the views I have intimated of the oneness or the identity of the mind through all individuals, I do not much dwell on these differences. In fact, I believe each individual passes through all three. The boy is a Greek; the youth, romantic; the adult, reflective. I deny not, however, that a revolution in the leading idea may be distinctly enough traced.

Our age is bewailed as the age of Introversion. Must that needs be evil? We, it seems, are critical; we are embarrassed with second thoughts; we cannot enjoy anything for hankering to know whereof the pleasure consists; we are lined with eyes; we see with our feet; the time is infected with Hamlet's unhappiness, —

Sicklied o'er with the pale cast of thought.

Is it so bad then? Sight is the last thing to be pitied. Would we be blind? Do we fear lest we should outsee Nature and God, and drink truth dry? I look upon the discontent of the literary class as a mere announcement of the fact that they find themselves not in the state of mind of their fathers,

and regret the coming state as untried; as a boy dreads the water before he has learned that he can swim. If there is any period one would desire to be born in, is it not the age of Revolution; when the old and the new stand side by side, and admit of being compared; when the energies of all men are searched by fear and by hope; when the historic glories of the old can be compensated by the rich possibilities of the new era? This time, like all times, is a very good one, if we but know what to do with it.

I read with joy some of the auspicious signs of the coming days, as they glimmer already through poetry and art, through philosophy and science, through church and state.

One of these signs is the fact that the same movement which affected the elevation of what was called the lowest class in the state, assumed in literature a very marked and as benign an aspect. Instead of the sublime and beautiful, the near, the low, the common, was explored and poetized. That which had been negligently trodden under foot by those who were harnessing and provisioning themselves for long journeys into far countries, is suddenly found to be richer than all foreign parts. The literature of the poor, the feelings of the child, the philosophy of the street, the meaning of household life, are the topics of the time. It is a great stride. It is a sign, is it not? of new vigor, when the extremities are made active, when currents of warm life run into the hands and the feet. I ask not for the great, the remote, the romantic; what is doing in Italy or Arabia; what is Greek art or Provençal minstrelsy; I embrace the common, I explore and sit at the feet of the familiar, the low. Give me insight into to-day, and you may have the antique and future worlds. What would we really know the meaning of? The meal in the firkin, the milk in the pan, the ballad in the street, the news of the boat, the glance of the eye, the form and the gait of the body, — show me the ultimate

reason of these matters; show me the sublime presence of the highest spiritual cause lurking, as always it does lurk, in these suburbs and extremities of nature; let me see every trifle bristling with the polarity that ranges it instantly on an eternal law; and the shop, the plough, and the ledger, referred to the like cause by which light undulates and poets sing; — and the world lies no longer a dull miscellany and lumber-room, but has form and order; there is no trifle, there is no puzzle, but one design unites and animates the farthest pinnacle and the lowest trench.

This idea has inspired the genius of Goldsmith, Burns, Cowper, and, in a newer time, of Goethe, Wordsworth, and Carlyle. This idea they have differently followed and with various success. In contrast with their writing, the style of Pope, of Johnson, of Gibbon, looks cold and pedantic. This writing is blood-warm. Man is surprised to find that things near are not less beautiful and wondrous than things remote. The near explains the far. The drop is a small ocean. A man is related to all nature. This perception of the worth of the vulgar is fruitful in discoveries. Goethe, in this very thing the most modern of the moderns, has shown us, as none ever did, the genius of the ancients.

There is one man of genius who has done much for this philosophy of life, whose literary value has never yet been rightly estimated; I mean Emanuel Swedenborg. The most imaginative of men, yet writing with the precision of a mathematician, he endeavored to engraft a purely philosophical Ethics on the popular Christianity of his time. Such an attempt, of course, must have difficulty which no genius could surmount. But he saw and showed the connection between nature and the affections of the soul. He pierced the emblematic or spiritual character of the visible, audible, tangible world. Especially did his shade-loving muse hover over and interpret the lower parts of nature; he showed the mysterious bond that allies moral evil to the foul material

forms, and has given in epical parables a theory of insanity, of beasts, of unclean and fearful things.

Another sign of our times, also marked by an analogous political movement, is the new importance given to the single person. Everything that tends to insulate the individual — to surround him with barriers of natural respect, so that each man shall feel the world is his and man shall treat with man as a sovereign state with a sovereign state — tends to true union as well as greatness. "I learned," said the melancholy Pestalozzi, "that no man in God's wide earth is either willing or able to help any other man." Help must come from the bosom alone. The scholar is that man who must take up into himself all the ability of the time, all the contributions of the past, all the hopes of the future. He must be a university of knowledges. If there be one lesson more than another which should pierce his ear, it is, 'The world is nothing, the man is all; in yourself is the law of all nature, and you know not yet how a globule of sap ascends; in yourself slumbers the whole of Reason; it is for you to know all, it is for you to dare all. Mr. President and Gentlemen, this confidence in the unsearched might of man belongs, by all motives, by all prophecy, by all preparation, to the American Scholar. We have listened too long to the courtly muses of Europe. The spirit of the American freeman is already suspected to be timid, imitative, tame. Public and private avarice make the air we breathe thick and fat. The scholar is decent, indolent, complaisant. See already the tragic consequence. The mind of this country, taught to aim at low objects, eats upon itself. There is no work for any but the decorous and the complaisant. Young men of the fairest promise, who begin life upon our shores, inflated by the mountain winds, shined upon by all the stars of God, find the earth below not in unison with these, but are hindered from action by the disgust which the principles on which business is managed inspire, and turn drudges or die of disgust — some of them

suicides. What is the remedy? They did not yet see, and thousands of young men as hopeful now crowding to the barriers for the career do not yet see, that if the single man plant himself indomitably on his instincts, and there abide, the huge world will come round to him. Patience, patience; with the shades of all the good and great for company; and for solace, the perspective of your own infinite life; and for work, the study and the communication of principles, the making those instincts prevalent, the conversion of the world. Is it not the chief disgrace in the world not to be an unit, not to be reckoned one character — not to yield that peculiar fruit which each man was created to bear, but to be reckoned in the gross, in the hundred, or the thousand, of the party, the section, to which we belong; and our opinion predicted geographically, as the north, or the south? Not so, brothers and friends — please God, ours shall not be so. We will walk on our own feet; we will work with our own hands; we will speak our own minds. The study of letters shall be no longer a name for pity, for doubt and for sensual indulgence. The dread of man and the love of man shall be a wall of defence and a wreath of joy around all. A nation of men will for the first time exist, because each believes himself inspired by the Divine Soul which also inspires all men.

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